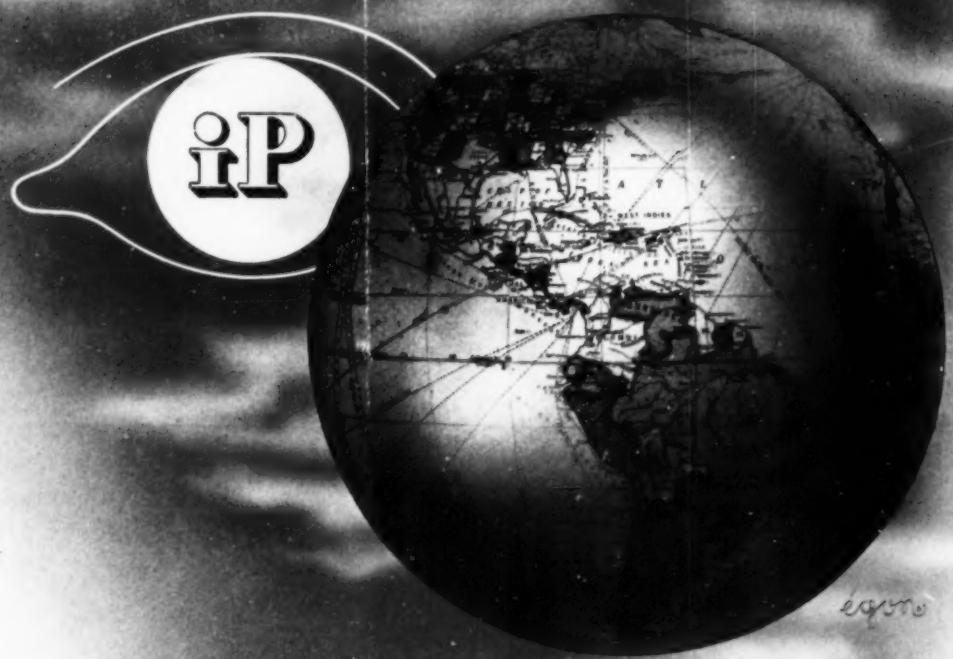
# INTERNATIONAL PROJECTIONIST



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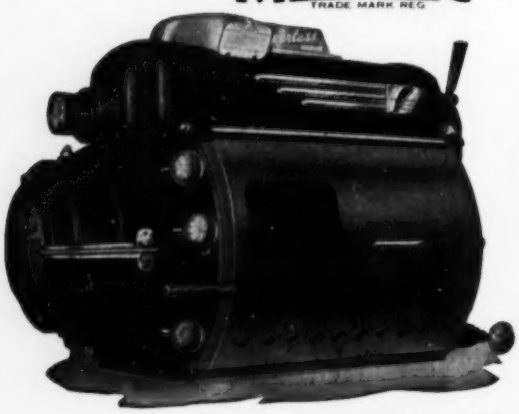

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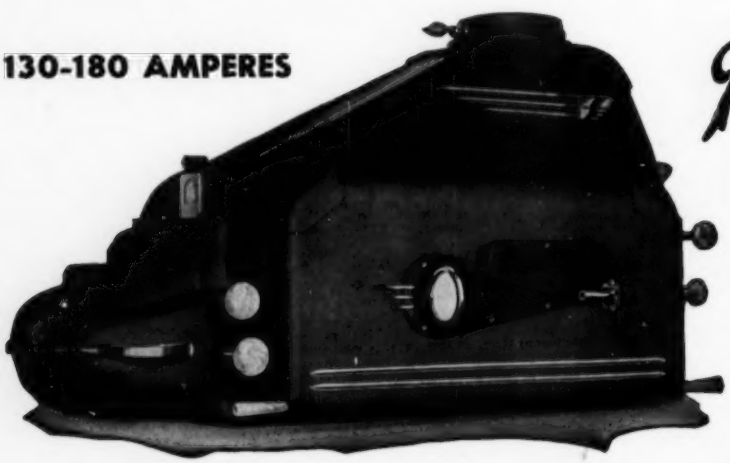

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# INTERNATIONAL PROJECTIONIST

With Which Is Combined PROJECTION ENGINEERING

JAMES J. FINN, *Editor*

*Volume* 28 APRIL 1953 *Number* 4



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## *MONTHLY CHAT*

SINCE IP is the accredited source of material quoted some 20-odd times in the technical and lay press during the past two months (to the dismay of some people encompassing the range from "executive" Hollywood studio personnel to projectionists in a theatre in Hartford, Conn.), it will herein suppress its subjective thoughts in favor of an objective factual report as follows:

There never was, and likely never will be, a run-of-the-mill, 3-D motion picture *with* stereophonic sound and other conceivable gadgetry, *improperly* applied, that could compare in terms of *entertainment value* with a straightforward "flat" presentation of a good basic theme given the full benefit of long-existent technological know-how. One has only to take a look (and if you are the appreciative kind, a second and third look) at the current M-G-M offering, "Lili," a work of pure cinematic art in conception and execution—story, acting, production values, including color and sound—which to our mind is a milestone along the road of technological progress.

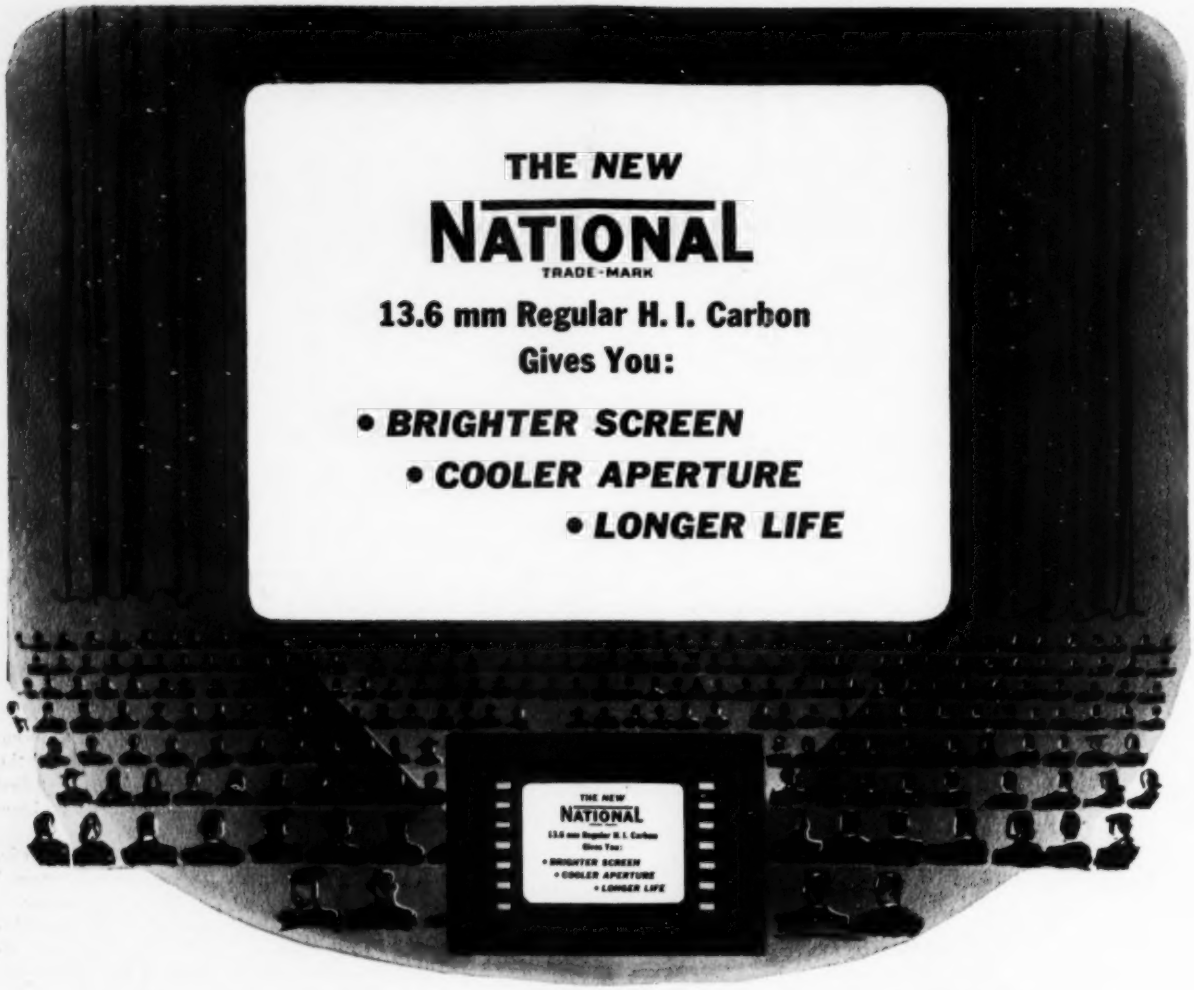
Relative to the world-premiere presentation of Warners' "House of Wax," the technical aspects of which are detailed elsewhere herein, we make purely objective observations, as follows:

3-D motion pictures are designed to be "realistic" but, true to form, Hollywood "murdered" it by piling realism *upon* realism through the medium of a straightaway "horror" story. NOTES: The low-key lighting is *too* low; the disposable individual viewing spectacles are just plain lousy; the stereophonic sound, magnificent in conception, was not an aid but rather an *imposition* on the auditor; the picture proportions (standard 3 x 4) are dead wrong. The viewing resulted in *definite* eyestrain to the point where all ten people in a given party were *relieved* when the showing was over.

As we saw it, "House of Wax" was not entertainment but an imposition on the paying patron. This "appallingly real" show by no means represents what can be done with this medium—and, unfortunately, it didn't. This, IP holds, is an art form in its infancy which suffered grievously through the misapplication of the tools available.

IP advocates: (1) immediate agreement upon standards; (2) vastly improved viewing spectacles; (3) the judicious use of a proper sound level, and (4) removal from the technological scene of the race-track and ticker-tape devotees who are now intrenched in the Hollywood and New York executive offices.

JAMES J. FINN

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INTERNATIONAL PROJECTIONIST

VOLUME XXVIII APRIL 1953 NUMBER 4

# CinemaScope: What It Is, How It Works

**IP presents herewith, as a matter of record, the observations of our good friend and colleague, Arthur Gavin, editor of *American Cinematographer*, on the 20th Century-Fox CinemaScope.**

A LENS which restores to its proper proportions an image previously distorted makes possible the compression onto 35-mm film of wide-angle panoramic scenes and is the basis of the new CinemaScope system of wide-screen motion pictures sponsored by 20th Century-Fox.

When the film is projected through a companion lens, the distorted image assumes its former normal dimension, just as a trick mirror in a carnival fun house would straighten out its distorted reflections if placed before a mirror having compensating distortions.

### *CinemaScope Not 3-D*

CinemaScope is *not* stereoscopic movies—not the same as 3-D. CinemaScope films do not require the use of viewing spectacles, do not require special dual motion picture cameras and dual projectors. But the result on the screen, which does present an *illusion* of three-dimension pictures, is said by some to be superior to 3-D films.

Like the Cinerama process, CinemaScope pictures are panoramic and have stereophonic sound. The wide screen used for CinemaScope is a solid screen having a great reflectance, and is curved slightly but not to the extent of the Cinerama screen.

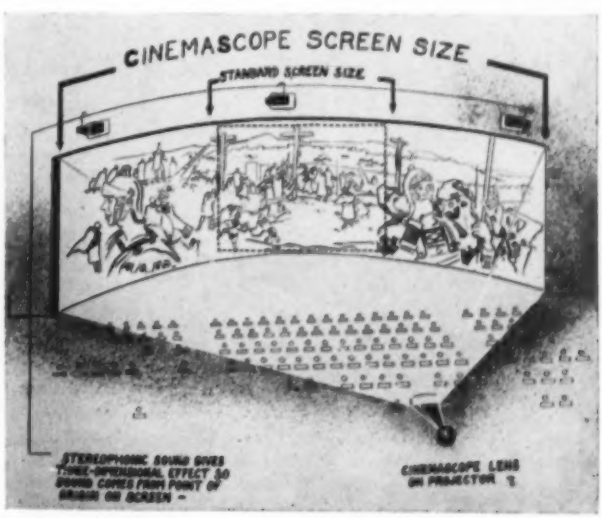
CinemaScope is a simple, inexpensive process applicable to either color or black-and-white films, which simulates three-dimension to the extent that objects and actors seem to be part of the audience, while its stereophonic sound imparts additional life-like quality as it moves with the actors across the screen.

CinemaScope is a simplified improvement of an anamorphoscope lens (which he called a Hypergonar) developed by Frenchman Henri Chretien.

*(ED. Note: Webster's dictionary defines anamorphoscope as: "A cylindrical mirror or lens which restores to its normal proportions an image distorted by anamorphosis.")*

### *Lens Attachment Used*

The anamorphoscope is fitted before the regular camera lens and functions to gather up a wide field of view and funnel it, compressed, through the camera lens, leaving a distorted image of the scene on the film. In projection, a similar anamorphoscope placed before the projector lens unscrambles the image so that it reaches the screen exactly




**PROJECTION OF CINEMASCOPE movies requires but one projector. Screen is curved slightly and fills entire stage proscenium. Three speakers—one in center and one at either side of screen (i.e., behind it)—reproduce the stereophonic sound track, to lend added naturalness and dimension to CinemaScope movies.**

as filmed and completely without distortion.

In describing the Hypergonar anamorphoscope lens, Chretien said: "The Hypergonars which we have built are of two types: for photography, and for projection. They differ only in their dimensions and their mountings."

From the optical point of view, they consist of two separately achromatized systems: a converging system consisting of two lenses, cemented together, and a diverging system consisting of three lenses, cemented together.

In photography, focusing of the anamorpsoscope is accomplished in accordance with the distance of the subject, by means of a spiral-shaped shaft and the help of a distance calibration. This does not alter in the least bit focusing of the camera lens.

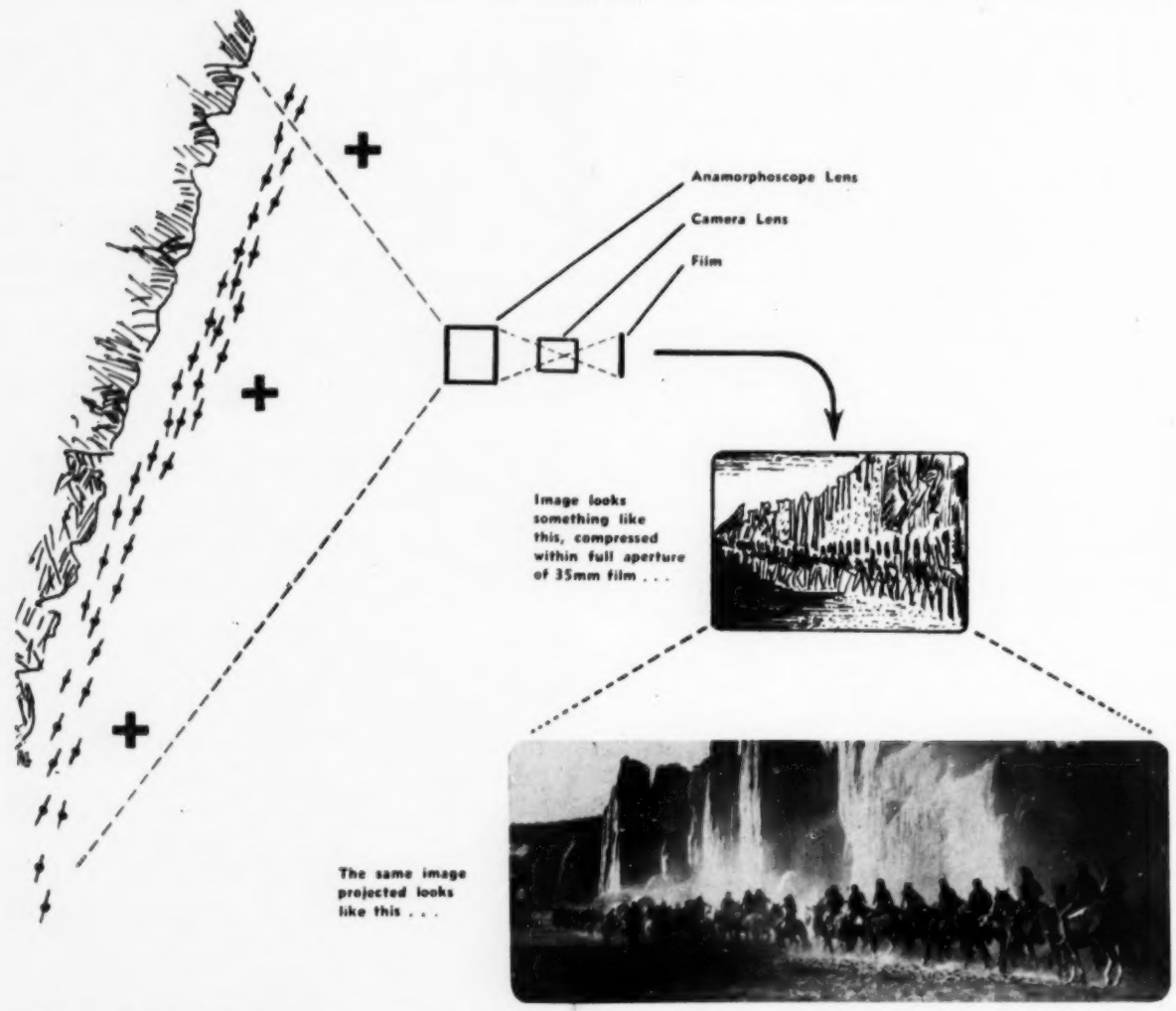
### *Projection Adjustment*

In projection, Chretien explains, the Hypergonar is adjusted once and for all in accordance with the distance of the screen, by means of a helical rack and pinion. The interposition of the Hypergonar does not modify the definition on the screen, he claims.

The loss of light occasioned by the introduction of the anamorphic attachments is insignificant, the inventor points out, because the consecutive interposition of only two supplementary lenses, *i. e.*, the two Hypergonar units, consists of cemented lenses. In addition, the exterior surfaces of the elements in each system are treated with anti-reflection coating. In projection, the screen brightness is reduced proportionately to the enlargement of the anamorphic attachment, since there is a larger screen area to light, and not in proportion to its square (as would be the case where the image were enlarged in all directions).

### *One Projector Used*

CinemaScope requires only one camera for filming and one machine for projection on the screen. It utilizes the same cameras and projectors now standing in all studios. And because the anamorphoscope lenses can be adapted to all makes of 35-mm cameras, 20th Century-Fox expects to make


Anamorphoscope Lens
Camera Lens
Film
Image looks something like this, compressed within full aperture of 35mm film . . .
The same image projected looks like this . . .

HOW CINEMASCOPE WORKS—Panoramic scene of marching Indians at left is photographed with an anamorphoscope wide-view lens in front of camera lens. This compresses image within the full aperture of 35-mm film. In projection, another anamorphoscope placed before projector lens expands compressed image to full scale so it appears on screen as shown above, lower right. Three microphones (X) placed strategically to cover the full range of the set or scene, record three separate tracks to provide stereophonic sound, a vitally important factor in the CinemaScope system. This is the 20th Century-Fox conception of the system.

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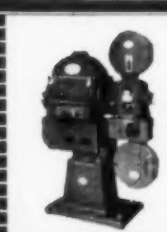

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**HOW CLOSEUPS WILL BE COMPOSED in CinemaScope wide-screen photography. Tight closeups will probably be avoided in favor of head-and-shoulders composition, with the figure or figures placed a little to the left or right of center of the frame, as in this sketch of a scene for "The Robe," 20th Century-Fox's first CinemaScope production.**

the CinemaScope system available to all motion picture studios.

Because the stereophonic sound tracks of CinemaScope films will be separated from the picture film, the picture will occupy the full width of the 35-mm aperture. In most cases, the 3-dimension sound will be recorded on magnetic film, in three separate tracks, as picked up by three microphones placed strategically in or above the set.

Although closeups are reproduced dramatically in CinemaScope films, fewer may be needed because medium shots of actors in groups of three and four show faces so clearly that the most minute emotions and gestures are obvious.

### *For Outdoor Spectacles*

In the beginning, it is likely that most CinemaScope productions will be basically outdoor spectacle dramas. This will go a long way toward solving the lighting problem—which undeniably will be great when it comes to shooting the large wide-angle sets indoors on the sound stage. Also, it is likely there will be less emphasis on effect lighting, admittedly not so important where films are shot in color.

Film-cutting problems in the new medium will not be as great as was at first expected; because there won't be as many cuts in CinemaScope films as with standard productions. These films will be like stage plays where the spectator visualizes closeups and medium shots when he *focuses* his individual attention on the principal player or some specific bit of action.

Where closeups are necessary, cameramen say, it is likely that these will be photographed with the player just a little to the right or to the left of the frame center—not too far to one side nor with part of the frame blacked out, as has been practiced in some other wide-frame systems.

### *Soundtrack Problems*

The cutting of the stereophonic sound tracks, perhaps, will pose one of the greatest problems for cutters, for unless the scene is properly composed both for sound and picture, cuts may occur at the very highpoint of, say, dialogue coming from the extreme right of the screen, with sound for the succeeding cut jumping back to the extreme left of the screen.

Of great importance to the viewer, there is no distortion of images in CinemaScope pictures from any seat in the theatre, it is asserted. [*IP dissents.*] Screens, specially developed for the new system for extra brilliance, may be any length desired to fit any theatre. The screen used for projecting tests at 20th Century-Fox studios is 64 feet wide and 25 feet high. A theatre like New York's Roxy would probably use one 80 feet long with proportionate ratio of height to width.

[***IP holds that a 2-to-1 ratio is the best.***]

### *Wide, Curved Screen*

The screen curves to a depth of five feet—enough to afford a feeling of engulfment without reflecting annoying highlight from one curved end of the screen to the other, as deeper curving screens are said to do.

Due to the immensity of the screen, few entire scenes can be taken in at a glance, enabling the spectator to view them as in life or as one would watch a play when actors are working from opposite ends of the stage.

It appears that CinemaScope will make special effects photography more important to film production than ever before. Matte shots will be widely used, and there is the possibility that such shots will be the answer to the building of vast panoramic sets where the action must be staged indoors on the sound stage.

CinemaScope is ideally suited to spectacle films in which most of the action can be played against huge outdoor panoramic vistas. (*Original opinion voiced by IP.*) 20th Century-Fox has chosen "The Robe" as its initial production to be made in CinemaScope. Fox, which holds world rights to the system, except for France and its colonies, expects to have between 3,000 and 5,000 sets of CinemaScope lenses available before the end of this year. [*IP thinks NOT.*]

## Film 1952 Profits Off 25%; Exhibitor Leader Optimistic

Reports on corporate earnings in the motion picture industry dramatically point up the great need to find new inducements for drawing customers into theatres and for relief from the present 20% Federal admissions tax.

A final report card on corporate earnings by 10 motion picture and film theatre companies, published this month by the *Wall Street Journal*, shows that earnings by these firms declined last year by 25.2%, dropping from $39,473,000 in 1951 to $29,530,000 in 1952.

Only three other industries were harder hit than the film field. Worse off were textiles, with a decline of 53.8%, followed by distillers with a minus change of 31%. Liquor firms are also appealing to Congress for tax relief.

Despite reports of declining revenue from exhibitors throughout the country, the film attendance situation in New York City is definitely improving, according to a statement by William Brandt, of Brandt Theatres. He estimated New York box-office receipts as now running better than 25% over two years, ago, and predicted that 3-D will bring even larger gains.

### *Sees Tv 'Saturation'*

"This part of the Tv market is saturated," Mr. Brandt asserted. He also pointed out that the closing of some theatres over the past few years because Tv competition and other reasons has left the remaining houses in a stronger position.

"As a matter of fact," he explained, "except for the 'fringe' houses that folded, the whole field of film exhibition has been doing all right. Theatres have been making money for so many years that their mortgages are pretty well eaten away." Mr. Brandt feels that most New York houses are in an excellent position to ride through a depression.

# Types of Theatre Sound Reproducers

**This is the fourth of a series of articles anaylzing the essential nature of devices that convert sound records into electrical currents.**

By ROBERT A. MITCHELL

## IV. The Sound-head

IT IS BAD practice to match the outputs of the two sound-heads by deliberately throwing one of the exciters out of focus in order to lower photocell response. The reproducers should be balanced by adjusting the voltage supplied to the exciters. In fact, the two projectors should be tested for equal sound output at the very earliest opportunity after replacing an exciting lamp. The easiest way to do this is to run 3,000-cps test loops in both projectors at the same time, switching back and forth with the changeover-fader to determine whether one machine gives louder sound than the other. Before making the test, adjust both exciter rheostats to supply full voltage to the exciting lamps, afterwards decreasing the voltage supplied to the exciter of the louder machine until the output seems balanced. By careful listening it is possible to adjust the outputs to within ½ decibel of each other. A difference of 1 db is just perceptible to the ear.

### *Adjusting Exciter Voltage*

Some makes of sound equipment, unfortunately, employ other means of equalizing the sound outputs of the two machines. In this writer's experience adjustable exciter voltage has proved to be the most satisfactory method, and certainly the simplest. Varying the output-current of the photocells, unless accomplished by means of very accurate constant-impedance "networks" of the potentiometer type, is likely to change frequency-response characteristics, and that's a bad thing. But where separate preamplifiers are used—one preamplifier for each sound-head—the output of these to the main amplifier may be adjusted by ordinary potentiometers of the type used as volume-controls in radio sets.

An exciting-lamp circuit is no more complicated than that of an ordinary electric-light bulb. But this does not mean that the projectionist should ignore it. A surprisingly large number of costly sound outages have been caused by defects in this simple circuit that could have been corrected in a jiffy had the projectionist taken the trouble to find out where his exciting-lamp current was coming from and where the fuses were located.

Low voltages are used for exciters because, in order to use a specified number of watts in the bulb, the current must be higher than in a high-voltage bulb burning the same number of watts. This means that the exciter filament must be made of heavier wire because the heavier the filament, the more immune it is to fluctuations in temperature (and brightness) with fluctuations in voltage. A 10-volt exciter drawing 5 amperes will give good sound even if operated on 60-cycle A.C. The A.C. hum is noticeable only when no film is in the projector. Now, an exciter of these specifications burns 50 watts, as the power in watts is merely electromotive force in volts multiplied by the intensity of the current in amperes.

$$P = E \times I$$

$$\text{Watts} = \text{Volts} \times \text{Amperes}$$

Suppose that, instead of this, we were to use a 50-watt 120-volt bulb as an exciter. It will be just as bright, but calculation shows that it draws a current of only 0.4197 ampere.

$$I = \frac{P}{E}$$

### *Exciter Lamp Filaments*

Because it draws so little current, however, the filament of the 50-watt, 120-volt bulb is made of much finer wire than the filament of the 50-watt, 10-volt exciting lamp. Consequently, the filament is unable to retain heat for any length of time, and would give a very strong A.C. hum if used in place of a regular exciting lamp. The 10-volt, 5-ampere exciter, even though burning the same number of watts and having the same brightness, has a filament of thick wire which is said to possess considerable "thermal lag." It takes a moment for it to brighten when the current is switched on, and it continues burning for a moment after the current has been turned off. A.C. of 60-cycles goes from "full on" to "completely off" 120 times each second; but the filament of the low-voltage exciter dims only the slightest bit during the "off" periods, while that of a 120-volt house bulb loses some of its heat and light during the periods when no current is being supplied.

Many of the lower-priced sound systems actually do use 60-cycle A.C., stepped down to the proper voltage by a transformer, for powering the exciters. Projectionists operating on such systems guard against hum reaching the ears of the audience during intermissions by avoiding, whenever possible, switching the fader to an unthreaded projector.

More expensive sound systems have either D.C.-operated exciters or vacuum-tube oscillators which supply A.C. of a frequency too high to be heard, and certainly too high to cause any fluctuations in the brightness of the exciter filaments. It will pay the projectionist to study his exciter current-supply apparatus in order to find out how it works and what is likely to burn out and require periodic replacement. In the case of most D.C. exciter current sources there is nothing more complicated to deal with than a set of Tungar rectifier tubes. Others make use of dry-disk rectifier packs.

While checking his apparatus, the projectionist should also ascertain whether or not his amplifier-tube filaments and his speaker field-coils are being energized by the same units. If he knows that the exciters have the D.C. current-supplying apparatus all to themselves, he need never get caught in a jam if something goes wrong with it. A toy electric-train transformer will serve to keep the exciters burning in an emergency. A couple of storage batteries may also be used (employing a rheostat to cut the voltage down from 12 volts); but dry cells will not last long enough.

The "flicker test" for focusing a soundhead optical tube was given previously. In addition to the in-and-out

adjustment of the optical tube, there is an azimuthal, or rotational, adjustment that warrants a few words—of warning! Azimuth need never be altered once it has been set correctly. This is usually done at the factory; and if your sound service engineer finds it necessary to disassemble the elements of the optical tube, he will restore correct azimuth. Don't tamper with it.

A different type of optical system involves the *projection* of an enlarged image of the soundtrack upon a slit placed close to the photocell. The advantage of this system lies in the ease with which the projectionist can adjust the focus.

Still another system, widely used in portable equipment because of its compactness, is the cylindrical-lens system, in which a reduced and "straightened" image of the lamp filament is focussed directly on the soundtrack, no mechanical slit being used.

But whatever the constructional details of the optical unit, it will function properly only if its lenses are kept free from dirt and oil at all times. Soiled lenses produce the same effects as an out-of-focus optical tube.

Distortion similar to that caused by out-of-focus optics may occur if the ionizing voltage supplied to the photocell is too low. This seldom happens unless line-voltage falls much below normal, though short-circuited condensers and worn-out amplifier tubes may cause it.

### *Photocells are Durable*

Photocells do not "burn out," and they last for a very long time unless damaged by excessive polarizing voltage or by exposure to direct sunlight or other bright light. *Rapid* deterioration of sound quality, therefore, is most likely the effect of a bad tube in the amplifier, not that of a "worn-out" photocell. Photocells are good just so long as they give normal sound volume; and their output is easily tested by actually trying them out in a soundhead known to be in good working order.

A photocell having loose elements or a loosened glass envelope is unfit for use, even if new. When we stop to consider that the tiny impulses generated in the photocell are amplified about 10 billion times to make them strong enough to operate the speakers, we can readily appreciate that mechanical vibration of a defective photocell easily cause "machine noises" or a "gargle" in the sound. Dirt in the photocell socket may cause grating or rasping noises.

It stands to reason that faulty amplifier-tube contacts and "burned" or dirty switches can cause exactly the same kind of intermittent noises which sometimes arise in the soundhead. If the theatre has a disk reproducer, the sound can be switched over from "film" to "disk" in order to determine whether the noise has its origin in the projector soundheads or in some other part of the system.

### *Soundhead Film Guides*

Every soundhead, new or old, has a film edge-guiding device to keep the soundtrack centered laterally in relation to the scanning beam. For if the film gets pushed in too far in the direction of the drive side of the mechanism, the film perforations will be scanned, resulting in a noise resembling that of a motorboat. Or if the film is displaced too far in the other direction, the frame lines will be scanned, making a noise like that of a pneumatic drill. Adjustment of the guide roller is best made while a special test film having a blank soundtrack, but "chopper" and "buzz" tracks on either side of the scanned area, is run. The guide roller is moved either in or out until no sound is heard, showing that neither the chopper nor the buzz track is being scanned.

The term "travel distortion" includes a number of troubles to which the expressive names, "wows," "flutter," "gargle," and "whiskers" have been given, all of which are defects caused by non-uniform rates of film-travel past the scanning beam.

When the pitch of the reproduced sound rises and falls at a slow rate, but rapidly enough to spoil the quality of the sound, the term "wows" applies. Variations in speed may be periodic or irregular; and when periodic, they occur at any rate up to about 3 cycles per second, the same rate of wavering as that intentionally produced by the tremolo and vibrato controls of an organ.

### *'Wows' From Powerhouse*

Incredible as it may seem, "wows" may originate in a powerhouse many miles from the theatre. In poorly regulated power plants it is often necessary for the control engineer to speed up or slow down the alternators at intervals in order to keep electric clocks running true. Also, two or more alternators connected in parallel may accidentally slip out of phase with one another. And when any of these things happen, an A.C.-operated phonograph or sound motion-picture machine will behave queerly. More than one projectionist has, on occasion, been alarmed to see his projector accelerate and decelerate without visible cause. The trouble is beyond his control, of course, and never so spectacular as the spontaneous bursts of temperament sometimes displayed by the old-fashioned vacuum-tube motor-control boxes of ERPI make.

Walter Green, president of National Theatre Supply Co., signs contract with Arch Oboler, producer of "Bwana Devil," for exclusive distribution of "Magic-Vuers," disposable 3-D viewing spectacles.

If the current supplied to a "wowing" projector is hitting on all 60 cycles, the motor may be suffering from an intermittent short-circuit in one of its windings, or the centrifugal switch may be defective. When the motor is known to be in good condition, the projector mechanism may be binding. Beyond these possible sources of trouble, the commonest cause of wows, in the case of rotary-stabilizer soundheads, lies in the adjustment and condition of the pressure guide-roller assembly. As a rule, wows from this cause make their appearance when a projector is started up, and may ruin sound quality for half a minute or so after a changeover is made.

The reason for this defect is failure of the film to bring the scanning drum up to normal speed. Increasing the tension of the pressure-roller spring often corrects this fault. But it is always a good idea to make sure that the drum itself revolves freely, for if it binds, due to dirt in the ball-bearings or to inadequate lubrication, a bad case of wows will surely result. The film be-

(*Continued on page 33*)

MAGIC CARPET...
from here
...to there!
By the reel, it's just so much film. On the screen, it's freedom...a magic carpet—from here—to there.
Actually, there's nothing in the world quite like a good show...nothing so relaxing...nothing so rewarding.
That's why it's so important that all details be precisely attended to. That's why the industry is so keenly interested in latest technics; why the Eastman Technical Service for Motion Picture Film, in turn, is so earnest in its co-operation, with every phase of the industry.
Branches at strategic centers. Inquiries invited.
Address: Motion Picture Film Department,
EASTMAN KODAK COMPANY, Rochester 4, N. Y.
East Coast Division, 342 Madison Avenue, New York 17, N. Y.
Midwest Division, 137 North Wabash Avenue, Chicago 2, Illinois.
West Coast Division, 6706 Santa Monica Blvd., Hollywood 38, California.

*To the Editor of IP:*

Regarding film cement, I am at present getting good splices with Fisher's Ethyloid and sanding one side of the splice. Cement does not show any tendency to attack the rubber bulb of the medicine dropper after more than two years of use.

Have been successful here in increasing screen light and reducing carbon consumption by two changes, which I would like to pass along. These changes cannot be carried out in all cases but are worth trying where possible.

The Wenzel projectors as first received here had the conventional rear 90° shutter blade installed. Using a piece of fibre as a test blade, I found it was possible to cut 1¼" off each corner of the outer edge of the shutter to a point towards the hub corner of the blades. Titles and pictures are sharp as with the full 90° blade, with no visible trace of travel-ghost or trembling, despite what Robert Mitchell says (IP for September 1952). In my opinion, a very small amount of "ghosting" is permissible without being noticeable to the audience.

The arc lamps in use here are the usual high-intensity with Strong 14-inch reflectors, two separate carbon feed motors, each with its own rheostat. The lamps are intended for use with the usual 6-mm negative and 7-mm positive carbons. Jaws of the negative carbon holder can hold a 7-mm carbon as easily as a 6-mm, and it was found that a 7-mm carbon in the negative side in place of the 6-mm not only gave a slightly brighter screen, but the two 7-mm carbons gave a steadier light with less critical carbon position setting. Also, carbon consumption dropped considerably. Carbon consumption for a 2000-ft. reel is ½" of negative and 1½" of positive. These figures can be vouched for by brother projectionists. Lamp voltage is 27 at 40 amperes. Carbons used are National Suprex.

K. C. Bridges
P. O. Box 25, Exeter, Ont., Canada

*To the Editor of IP:*

After reading your Monthly Chat in the March IP, I have come to appreciate more the plain speaking for which IP is noted. The trade papers in publishing every item of so-called "news" about 3-D and the various large screen processes, without analysis of the true worth of that "news," have served only to increase the confusion in the minds of exhibitors as to how to equip their theatres and for what.

Your placement of 3-D picture showings far in front of present and proposed wide-screen picture showings is entirely correct. It is possible for nearly all theatres to equip for 3-D for a comparatively small additional investment, while physical limitations of many, many theatres definitely prevent installation of extra-wide screens.

Furthermore, the equipment branch of the motion picture industry is in a position to supply theatres with equipment necessary to show 3-D pictures over a reasonable period of time, while it is not fully prepared to handle the manufacture of equipment for systems still in the formative stage.

### *Stereophonic Sound a "Must"*

3-D picture showings will be materially enhanced by the addition of stereophonic sound. If Hollywood would only select the Western Electric method of printing 3 sound tracks on the film where the present single track is now printed, the equipment manufacturers could quickly make stereophonic sound equipment that would be within the reach of nearly every exhibitor.

When a picture like "Bwana Devil" attracts as many patrons as it has, it proves that showings of better 3-D pictures will continue as good box-office draw.

I note, however, a tendency on the part of many theatre owners to confine their equipment purchases for 3-D picture showings to interlock equipment, large magazines, an additional power source, and, reluctantly, a new screen. It is my opinion that if theatre owners don't use arclamps giving the maximum obtainable screen illumination, 3-D will cease to be big box-office.

You have stressed for years the necessity for adequate screen illumination. I hope you will continue to do so and thus help the entire industry to regain and hold its lost patrons.

Fred C. Matthems
Motiograph, Inc., Chicago

*To the Editor of IP:*

Anent the March "Monthly Chat," I had to get the following comments off my chest. I agree that Hollywood has always neglected the very considerable technical ability available, both in and *out* of Hollywood. Only when trouble arose did they realize that their existence was a result of this brainpower. Now we see the spectacle of the studios running about frantically and causing confusion. Instead of a planned investigation under the auspices of the Academy, we have a repetition of the days when sound was introduced.

Stereo is old-hat to many amateurs in photography. This group is highly critical and capable of seeing the errors in 3-D. On the whole, they have been rather generous to "Bwana Devil," on the ground that it was a "first" and a quickie at that. Subsequent productions had better show considerable improvement lest 3-D get soundly panned—and ignored.

We assume that 3-D is in its infancy and that there is no limit to its growth—an assumption IP has also made for Tv. However, color Tv is not just being held back by the Tv industry; it is not yet in a *commercially* practical state. As for 3-D on Tv, maybe it isn't impossible, but don't throw a scare into an already frightened industry. Tv has enough headaches just putting on black and white shows.

In conclusion, the impact of 3-D is impressive when properly handled. I feel that the future of the film theatre lies more in this process than in wide or giant screen systems that could end the full-screen intimacy that is now an important part of modern films. Let Hollywood really investigate what has been done, what might be done, and then come up with a foolproof process.

Alfred E. Revzin
New York, N. Y.

## Theatre Video Experiment

A closed-circuit theatre television program, designed to attract young people to careers in science or engineering, was presented last month to 2,500 junior and senior high school students from the New York metropolitan area. The Paramount Theatre on Broadway, the Fox in Brooklyn and the RKO Fordham Theatre in the Bronx were used in the experimental project.

Arranged by the Technical Studies Council of New York, Inc., with the cooperation of the Public Service Committee of the theatre-television industry and other groups, the closed circuit program presented practical demonstrations of work in the fields of electronics, aviation, nuclear physics, petroleum chemistry, construction and other industries.

Dr. William Jansen, New York superintendent of schools, said as he appeared at the program's conclusion that he felt he was making "education history." A two-way audio hookup in the theatres allowed the students to question a three-man panel of scientists.

*Another IP 'First'*

# World-Premiere of Altec-Paramount 4-Projector, No Intermission, 3-D Color Showing

**IP is proud that its reputation for plain speaking and the presentation of factual data relative to the various "new" processes now being employed in the motion picture industry has merited its selection as an exclusive medium for the publication of an historic technological first.**

THE persistent, long unrecognized and unrewarded efforts of motion picture technicians came to fruition on the night of April 10 last when there was presented at the New York Paramount Theatre for the first time anywhere a third-dimensional, full-stereophonic sound, *non-interrupted* motion picture—"House of Wax." It would be idle to speak of opening up a "new era in cinematography for the simple reason that the achievements of these technicians speak so eloquently for them.

Happily for the motion picture industry, the N. Y. Paramount job is to be followed by similar installations throughout the U. S. A. with the same expert blending of technological resources. This triple-header "first" for Warners, for the Altec companies and for the Paramount is a happy augury for brighter days ahead on an industry-wide front.

"Wax" was recorded full-stereophonic in the following manner:

### The Recording Process

Three stereophonic channels which feed the three speaker systems located on the stage are recorded on 35-mm *magnetic* film, there being three magnetic tracks 200 mils wide with 150-mil separations being recorded thereon. The right-eye picture film carries a photographic soundtrack on which is recorded selected music and special sound effects which will be reproduced over the theatre main system feeding auditorium speakers which will be mounted throughout the auditorium.

The left-eye picture has recorded on it a *full* photographic track carrying monaural sound of the *entire* picture which can be used in the event the stereophonic presentation is not desired, or for emergency use if necessary.

The 35-mm magnetic film is reproduced on a three-track magnetic reproducer which, together with a three-channel Altec amplifier system, are the main portions of the sound equipment added to the projection room. In addition, a second room monitor speaker is used to monitor the magnetic film reproduction. Three Altec speaker systems are installed in the theatre in back of the screen—one in the center, one on the left side and one on the right-hand side of the stage. There are 18 large cone-type speakers installed in suitable cabinets located in the rear and rear sides of the auditorium.

In addition to the normal projectors required for the presentation of the 3-D picture which have been equipped with interlocks, filters and 5000-foot magazines, the magnetic reproducer supplied also accommodates 5000-foot reels from which is reproduced the three magnetic tracks.

### Visual-Sound Tie-In

The magnetic reproducer is tied-in with the projectors by means of an interlock so that *all three* units operate in synchronism. In order to avoid an intermission in the program, all the equipment being installed in the Paramount is dual equipment. This means that there are *four* picture propectors and *two* magnetic reproducers. These are interconnected as *two* systems. Each system consists of two projectors and one magnetic reproducer. Changeover between the two systems is effected by relays and changover switches in order to effect instantaneous changeovers between the systems, thereby avoiding intermission in the program, which is again a "first" as far as the presentation of 3-D is concerned.

The magnetic reproducer rack consists essentially of:

1. Film-Feed Panel
2. Motor-Control Panel
3. Film-Drive Panel
4. Film-Makeup Panel
5. Jack Strips
6. Pre-Amplifiers

### Film-Feed Panel

The film-feed panel corresponds to the upper magazine in a projector and carries the spindle on which is placed the full reel of magnetic film to be reproduced. This reel is driven by a separate torque motor especially designed to provide tension to the film and feed it properly to the reproducer mechanism. The same motor is also used when rewinding the film.

By applying sufficient voltage, the film may be rewound from the takeup reel after it has been unthreaded from the drive panel. When rewinding, enough holdback-voltage is applied to keep the film under control. A buckle switch protects the film, and all the necessary voltage changes are handled

### *"Wax" Credits to:*

**Warner Brothers Pictures for their belief in and support of, in terms of cash, their aspirations:**

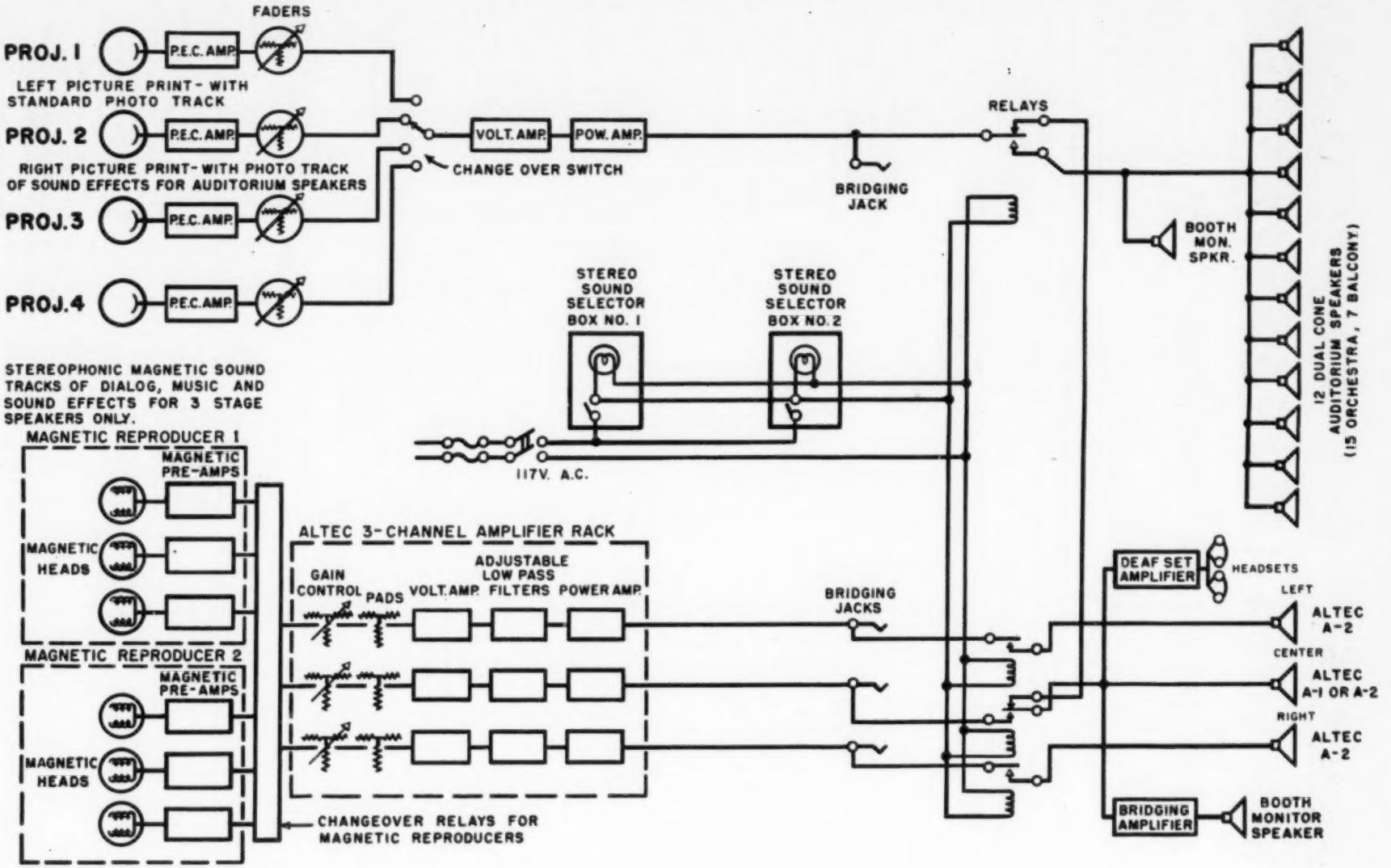
**Bill Mueller, director of sound for Warners; his assistant, Lloyd Goldsmith; musical director Ray Heindorf and visual director Andre De-Troth—and their staffs—who worked around the clock to effectuate, *via* a full re-recording job, the Warner decision to go all-out with full stereophonic sound for "Wax";**

**Altec Lansing and Altec Service Corp. who gave unstintingly of their facilities in a happy marriage of manufacturing and installation know-how for the over-all good of the industry, and**

**One of our own projectionist family, Harry Rubin, director of projection for United Paramount Theatres circuit under whose personal supervision the history-making N. Y. Paramount installation was made, who insisted on a 4-projector, non-interrupted showing setup.**

**To the Altec and Paramount crews, unnamed but not to be forgotten, who worked through tedious days and nights to erect this milestone of progress along the road of motion picture technology.**

## Over-All System Schematic for Altec Installation for 3-D 'House of Wax' Premiere Showing



automatically when the motor switch or rewind key on the control panel is thrown. The torque motor is equipped with a brake which stops the motor after each running.

### Motor Control Panel

The motor-control panel has the rotary motor switch that connects the drive-motor to either the Selsyn interlock drive from the projector motor system or the three-phase, 220-volt supply for independent running. Between the two positions is an "Off" position that completely isolates the motor from the line. In either of the running positions, the appropriate single-phase, 220-volt power is applied to the torque motors, and the torque motor brakes are released.

The key switch is the rewind switch which allows the film to be rewound from the lower to the upper reel, or *vice versa*, when it has been removed from the drive sprocket and the soundhead.

The push-button is a brake release which when operated removes the brakes from the torque motors when the film is threaded through the buckle switches. This facilitates threading the drive sprocket and soundhead, and allows easy positioning of the sound start at the pickup head.

The buckle switch for the film-feed torque motor is also mounted on the motor control panel. This removes the power from the torque motor and applies the brakes whenever the film runs out.

### Film-Drive Panel

The film-drive panel contains the drive motor which is actually two motors in one—a Selsyn interlock motor and a synchronous motor. The synchronous motor is used only for independent operation, for sound system testing, *etc.* The Selsyn motor is used for all regular stereophonic theatre sound reproduction.

The drive-motor operates the single-drive sprocket, and drives the film over the tension rollers, the flywheel drums and the magnetic sound reproducing heads. The drums and heads are enclosed in a shield box to reduce the possibility of hum pickup.

### Film-Takeup Panel

The film-takeup panel is a duplicate of the film-feed panel, and its operation is similar. Since it is acting to take up the film during normal running, somewhat higher voltage is applied to the torque motor to insure satisfactory operation regardless of reel diameter.

When rewinding, the torque motor operates like the one in the film-feed panel, but the voltages are applied in *opposite* order. For rewind-up, the applied voltage is high on the film-feed motor and low on the takeup motor. For rewind down, the voltages are reversed.

### Jack Strips

There are two rows of jacks which provide facilities for checking the sound output from the pre-amplifiers.

In the upper row, Jack pairs 1, 2 and 3 are the actual output of the three sets of pre-amplifiers. In the lower row, Jack pairs 1, 2 and 3 are the lines which carry the sound to the amplifier rack. The Jack pairs 1, 2 and 3 in the upper row are normalled to the corresponding Jacks in the lower row.

The output of the pre-amplifiers also appear on Jack pairs 10, 11 and 12 in row One, and the circuits may be monitored on these Jacks without interrupting the normal circuits to the amplifier rack.

### Pre-Amplifiers

At the very bottom of the rack is a tray containing three pairs of amplifiers which receive the output of the reproducer heads. These amplifiers are made readily removable for servicing purposes. The first amplifier of each pair contains equalization for compensating for the normal characteristics of magnetic recording. A screwdriver-controlled switch allows further adjustment of the characteristics to compensate for head wear.

### *Gain Amplifier in Each*

The second amplifier of each pair is a gain amplifier with a flat characteristic. A gain-adjusting pot with screwdriver-control is available on this amplifier. The output of each pair of amplifiers feeds through Jack rows, as already noted, and may be picked up on a terminal block at the base of the rack accessible from the rear.

In addition to the aforementioned equipment, the changeover mechanism for changeover between the two magnetic reproducers is also located on the rear of this rack and is relay-controlled from a changeover switch located on the front wall of the projection room.

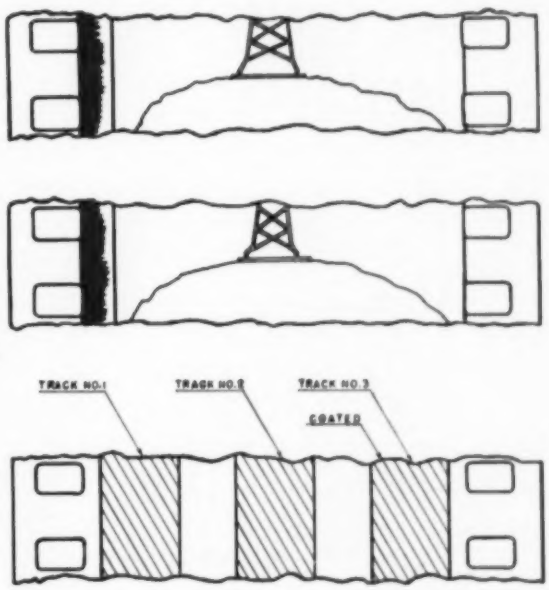
### Altec 3-Channel Amplifier Rack

The Altec three-channel amplifier rack consists of three identical amplifier channels. Each channel is capable of delivering 75 watts of power with less than 2% total harmonic distortion. Each channel comprises the following:

*A.* A volume control nominally set

(*To page* 20, *following* 2-*page schematic*)

**Sound tracks utilized by Altec installation of wiring and equipment for the premiere showing of Warner's 3-D "House of Wax" at the N. Y. Paramount Theatre.**



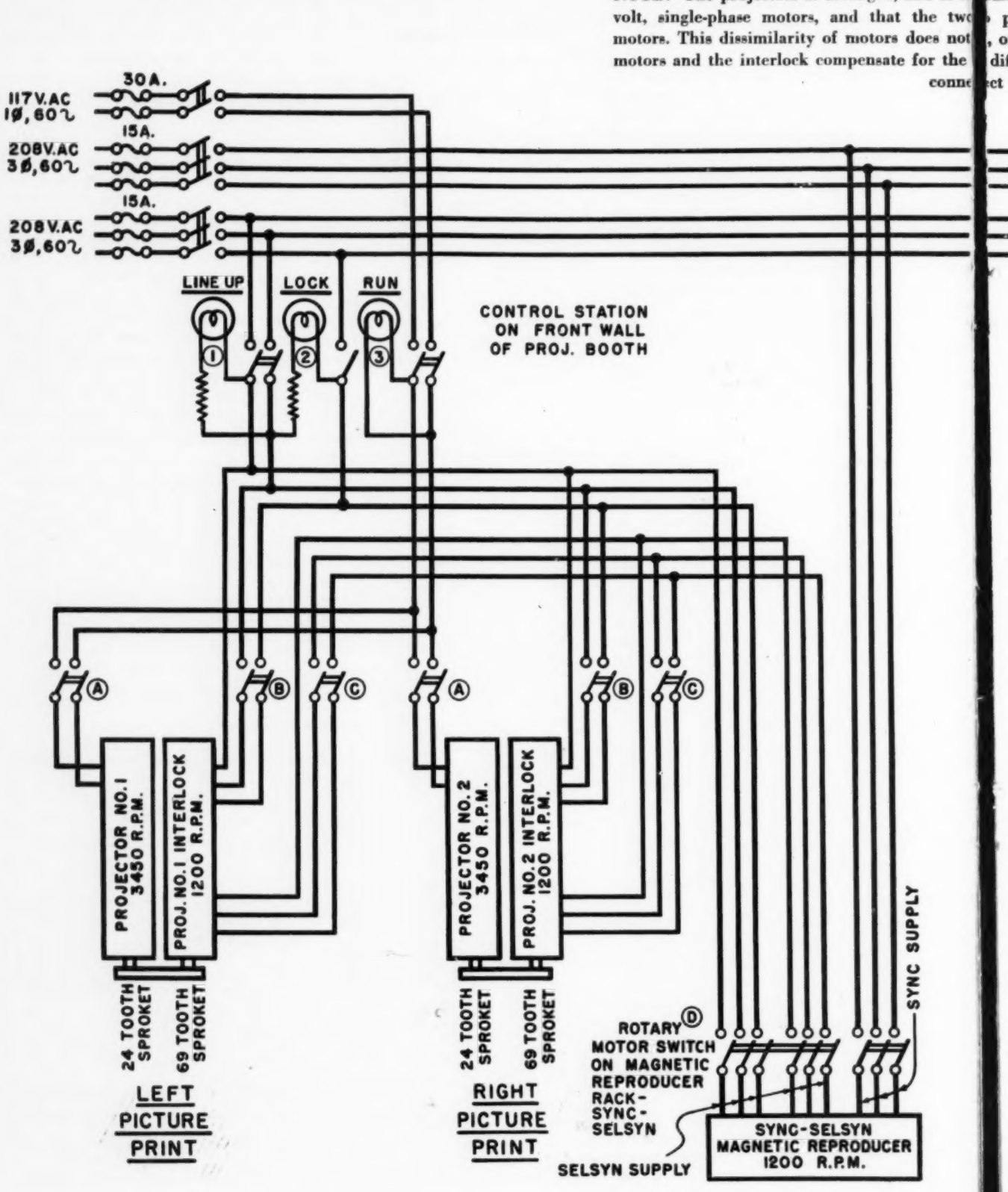

**Left-picture print with *complete* standard photographic soundtrack for normal and emergency stereophonice use.**

**Right - picture print with photographic sound track of selected music for sound effects for *auditorium* speakers only — this for stereophonic.**

**35 - mm magnetic film with triple-track magnteic recording to feed the left, the center and the right stage speakers.**

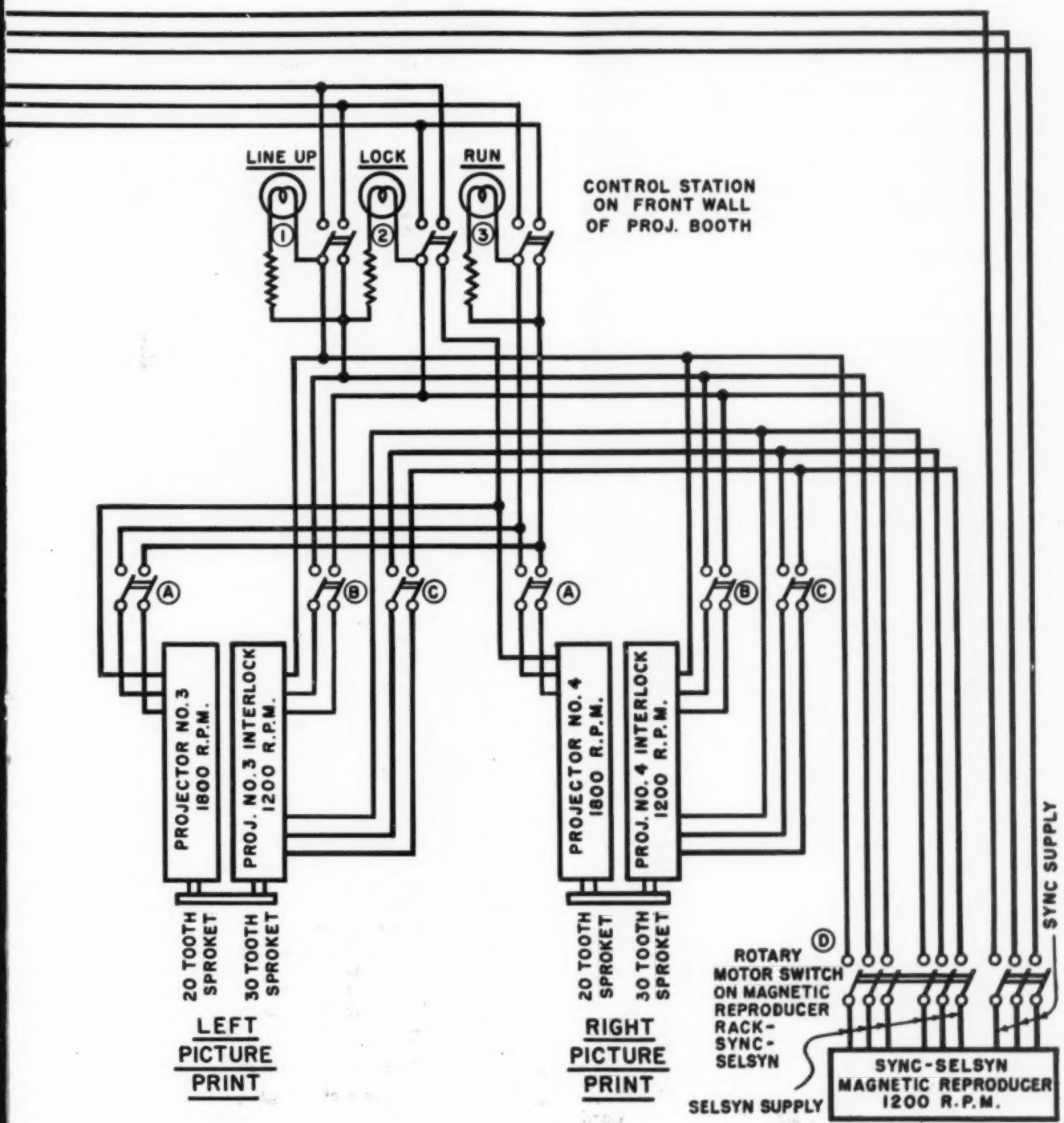
# Interlock and Motor Schematic for N. Y. Paramount Installation f

NOTE: The projectors as arranged, and as in
volt, single-phase motors, and that the two
motors. This dissimilarity of motors does not
motors and the interlock compensate for the
connect



## or 4-Projector, Non-Interrupted, 3-D Showing of 'House of Wax'.

dicated in this drawing, show that Nos 1 and 2 projectors are equipped with 3,450 r. p. m., 110- projectors in Group 2 (right-hand side) are 1,800-r.p.m., 220-volt, three-phase synchronous , of course, impose any operational difficulties, since the gear arrangement between the drive differences in the motor speed. Subsequent installations will make it necessary at times to inter- ct motors of *different speeds* on the *same* installation.



## 4-PROJECTOR, NON-STOP, 3-D COLOR, STEREO SOUND

(*Continued from page 17*)

on 20 db, of 20 steps, 2 db each, and a fixed 30-db pad.

*B.* A voltage amplifier with a gain of 40 db. The frequency response of this amplifier is nominally flat from 20 to 20,000 c.p.s. High-frequency roll-off for theatre equalization is accomplished in this amplifier.

*C.* An adjustable low-pass filter. This filter provides for high-frequency cut-off characteristics and is used to accomplish the final theatre characteristics.

*D.* A power amplifier with a maximum gain of 50 db and an output of 75 watts. This amplifier also provides gain control in 9 steps of 2 db each. Normal operation of this amplifier is with a gain control on maximum.

*E.* An audio relay panel is provided to switch amplifier power to the speakers. The switching of the outputs in the three channels for "stereo" to "normal" operation is effected by means of stereo-selector boxes mounted on the front wall.

*F.* A bridging Jack is provided across the output of each of the three channels at the input of each speaker relay. These Jack points provide easy access for test purposes and for headphone monitoring of each of the three stereo channels.

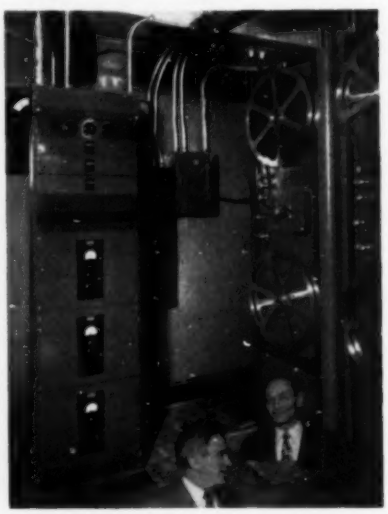
### Speaker Systems

The main theatre speaker systems for stereophonic reproduction are the large-size Altec Lansing A2 speaker systems for each of the three stereo channels. Each speaker system consists of a network of high-frequency horns equipped with two high-frequency speakers and two low-frequency horns accommodating four low-frequency speaker units.

### Speaker Positioning

As mentioned previously, these speaker systems are located as follows: One in the center behind the screen, one to the extreme right, and the other to the extreme left in back of the screen.

A fourth set of speakers consists of approximately 18 small individual speakers mounted in suitable cabinets installed in the balcony and lower floor sections of the theatre. These speakers are located in the rear sides and are connected by means of matching transformers. This set of speakers is fed by the existing theatre amplifier system which, as mentioned previously, carries the auditorium music and sound effects which originates on the right-eye picture optical sound track.

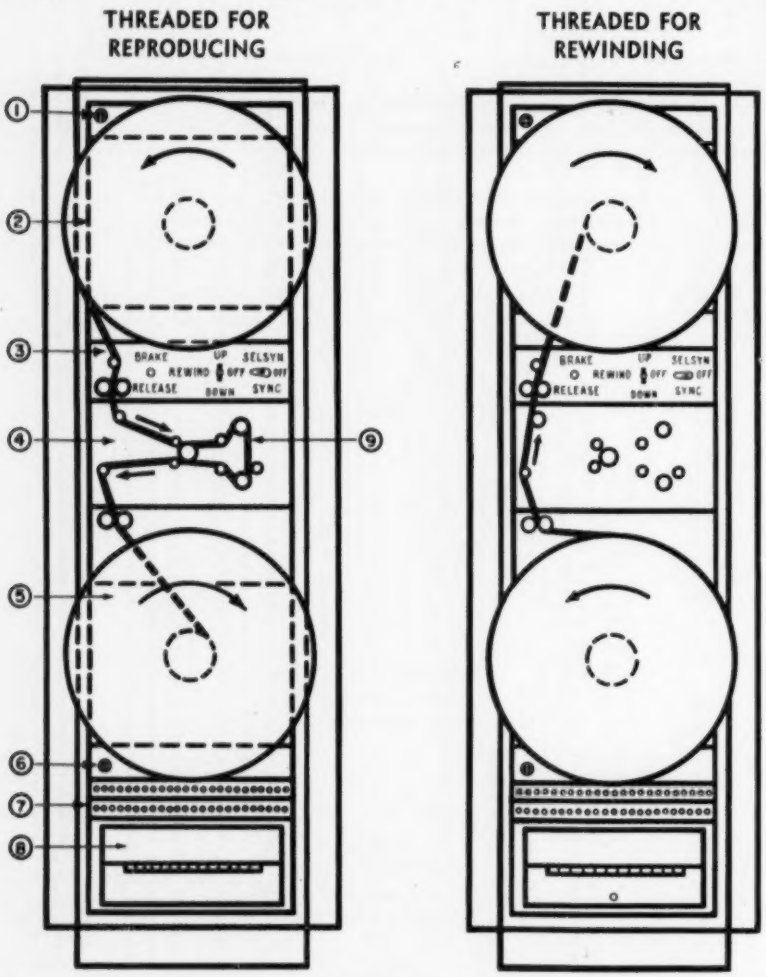


Stereophonic sound reproduction for Warners' "House of Wax" at the N. Y. Paramount Theatre: the rack on the left-hand side showing 3 amplifiers is the 3-channel stereo sound system. The two racks of equipment on the right-hand side are 3-channel magnetic tape reproducers which provide continuous performance without intermission. Inset in photo at lower right are (left) Bill Mueller, director of recording for Warners, and (right) Harry Rubin, director of projection for U-P Theatres.

### Emergency Operation

In case of emergency operation, or when it is desired to reproduce only

## Magnetic Sound Reproducer for 3-D 'House of Wax'




1. Feed Panel Pilot Light; 2. Film Feed Panel; 3. Control Panel; 4. Film Drive Panel; 5. Film Takeup Panel; 6. Takeup Panel Pilot; 7. Jack Strip; 8. Pre-Amplifiers, and 9. Side With Magnetic Coating.

the *monaural* soundtrack, a changeover device enables the input to be switched from the right-eye picture machine to the left-eye picture machine, and at the same time the output of the main existing theatre system which in stereophonic operation feeds the auditorium speakers, can be switched to the center-stage horn system. In this manner normal non-stereophonic theatre sound is reproduced.

**Motor Drives**

The motors of the two projectors which are used for the right- and left-eye pictures must be kept in perfect synchronism with the magnetic reproducer in order to properly present the 3-D picture and stereophonic sound. This is accomplished by having the two projectors and the magnetic reproducer interconnected with interlock motors. Once interconnected, switches provide the following control sequences:

1. Line up
2. Lock
3. Run

Under these conditions all three machines are threaded, aligned, locked into position and started simultaneously and provide for perfect synchronism. The switches for the interlock system are so arranged that by disconnecting interlock switches, *individual normal control of each projector motor* for the presentation of "flat" pictures is possible.

Since, as previously indicated, the Paramount installation provides for *continuous* showing, interlock systems are so arranged that there are two groups of motor controls:

**One handling two projectors and one magnetic reproducer, and the other handling the two projectors and other magnetic reproducer.**

Through the close cooperation of Harry Rubin, U-P Theatres director of projection; Paul Bracca, stage director of the Paramount Theatre, and R. W. Kautzky and Fred Hall of Altec Service Corp., the Paramount stereophonic installation is not only the most elaborate but without doubt the most complete modern theatre visual and sound projection system ever conceived. As the first such installation in the world, it should set high standards for the rest of the industry to follow.

**[NOTE: IP invites queries from the craft relative to any phase of 3-D, stereo-sound projection.]**

# 3-D Big Topic at SMPTE Convention

STEREOPHONIC sound, 3-D and wide-screen pictures will be the featured subjects in a program of 61 technical papers and demonstrations scheduled for the 5-day convention of the Society of Motion Picture and Television Engineers starting April 27th at the Los Angeles Statler Hotel.

About 1,000 motion picture and television technicians are scheduled to attend the meeting, according to Jack Servies, SMPTE convention vice-president and vice-president of National Theatre Supply. The program includes a number of technical papers on television which will be of great interest to the television engineers who meet the same week at the Los Angeles Biltmore Hotel with the National Association of Radio & Television Broadcasters.

Mitchell Wolfson, leading theatre owner, will give the engineers an experienced exhibitor's viewpoint on 3-D, wide-screen pictures, theatre television and drive-in problems when he leads off the convention program as guest speaker at the opening luncheon.

Included in the convention schedule is a demonstration of CinemaScope, complete with stereophonic sound on a 65-foot screen, through the courtesy of the 20th Century-Fox Film Corp.

Technical sessions include addresses by Dr. Harvey Fletcher, an outstanding authority on sound and hearing; a talk by R. A. Sherman, of Bausch & Lomb on stereo vision, a tour of the CBS Television City, and an engineering symposium on stereo motion pictures with J. A. Norling, R. J. Spootiswoode and A. J. Hill conducting a panel discussion of stereo production and exhibition.

A screen brightness symposium and papers on drive-ins will appeal to equipment men and exhibitors, particularly a report by R. L. Estes, of Eastman Kodak on the effects of stray light on projected picture quality.

Following is a summary of technical papers to be read at the convention that are of particular interest to the motion picture craft:

### HUMAN VISION AND 3-D MOTION PICTURES

**R. A. Sherman**
*Bausch & Lomb Optical Co., Rochester, N. Y.*

Viewing of stereoscopic motion pictures has important therapeutic values for the individual. Benefits to the young child from observation of properly made stereoscopic pictures will be discussed. This paper will be followed by descriptions of current stereo production techniques by Paramount Pictures Corp., Warner Bros. Pictures, M-G-M Studios, and RKO Radio Pictures. These talks will be illustrated with demonstration film.

### WESTREX FILM EDITOR

**G. R. Crane, F. Hauser and H. A. Manley**
*Westrex Corp., Hollywood, Calif.*

This paper describes a film-editing machine which employs continuous projection resulting in quiet operation. It accommodates standard picture and photographic or magnetic sound film as well as composite sound-picture film. Differential synchronizing of sound and picture while running, automatic fast stop and simplified threading features in the film gates with finger-tip release materially increase operating efficiency.

### A NONINTERMITTENT PHOTOMAGNETIC SOUND-FILM EDITOR

**Walter H. Hicks**
*Centaur Products Corp., Manhasset, N. Y.*

The direct editing of magnetic sound tracks without resorting to photo- or ink-traced visualizing is discussed as an integral part of a film-editing machine. Composite photo and magnetic track scanners are reviewed. Nonintermittent methods for the projection of films on a rear-vision screen of comparatively large size and selective wall-screen picture projection are described. Editing, copying, recording and re-recording of magnetic sound tracks on an all-purpose machine is demonstrated.

### RECENT DEVELOPMENTS IN CARBONS FOR MOTION PICTURE PROJECTION

**F. P. Holloway, R. M. Bushong and W. W. Lozier**
*National Carbon Co., Fostoria, Ohio*

Recent developments in projector carbons are discussed with particular reference to the requirements of such motion picture theatre developments as outdoor theatres, 3-D pictures and wide-screen processes.

### THE EFFECTS OF STRAY LIGHT ON THE QUALITY OF PROJECTED PICTURES AT VARIOUS LEVELS OF SCREEN BRIGHTNESS

**Raymond L. Estes**
*Eastman Kodak Co., Rochester, N. Y.*

The influence of stray light on the quality of projected pictures has been studied and data are presented showing the effects at various levels of screen brightness. Changes in the picture reproduction by stray light may easily be confused with poor print quality. From the results obtained, it is concluded that a standard of screen brightness may be misleading unless the amount of stray-light brightness is limited to a fixed proportion. These results indicate that for

(*Continued on page* 32)

# *IN THE*

# SPOTLIGHT

SETTLEMENT of the dispute between IA Loal 171, Pittsburgh, Penna., and the Warner Theatres management relative to the first showing in the Local's jurisdiction of a 3-D picture ("Bwana Devil," IP, Feb. 1953, p. 20) was settled to the satisfaction of Local 171 on the basis of a $9\,^1/_{10}$ increase in wages for such "unconventional" showings. The 1951 contract negotiated by Local 171 expressly stated that it did not apply to "conditions . . . not in existence" at that time.

This provision was invoked by the Pittsburgh Local when a 3-D hove into view. This, asserted Local 171, was a "new condition," a "new medium." After a series of events which included the closing of the "Bwana" theatre for two days and an appeal to the IA General Office, the Local 171 men returned to work with the understanding that a settlement of the dispute would be retroactive; and it was, on the aforementioned basis.

This incident points up the oft-stated stand of IP that 3-D, Cinerama, or CinemaScope showings warrant not only a higher scale but *additional* manpower. Admission scales of themselves have only a slight bearing on the situation in view of widespread competent opinion that the success of any and all of these processes depend solely on the *quality of projection work.*

To quote directly from an address by Herbert Barnett, president of the Society of Motion Picture Engineers and vice-president of Cinerama, Inc., before the recent convention of the Independent Theatre Owners of Ohio:

"Don't go in for 3-D unless you can do a top-notch job of projection. Unlike the presentation of conventional pictures, anything less than fine projection destroys what you are selling. . . ."

IP holds that the vast majority of projectionists always put on a good show; but it is equally insistent that if the industry *as a whole* is to benefit (profit) as a result of the various news processes, the projectionist as an integral, if frequently forgotten, figure in the industry scheme of things is entitled to a slice of that profit.

• Two shifts, each one consisting of five men plus an additional relief man, make up the projection crew at the Detroit Music Hall where Cinerama is now being shown. One man is stationed in each of the three specially built projection rooms located on the main floor of the theatre, and a fourth man in the regular projection room in the balcony of the theatre. The fifth man is in charge of the "mixer," which is placed in front of the downstairs center booth. Roger Kennedy, business representative for Detroit Local 199, was in charge of negotiations for the Local.

**Harland Holmden, for many years business representative for Cleveland Local 160, has been appointed by IA President Richard Walsh as assistant IA president to succeed the late Thomas J. Shea.**

• The New York State Association of Motion Picture Projectionists will hold its 1953 Spring meeting on Monday, May 11, 2 p. m., at Frank's Tavern, East Main Street, Middletown, N. Y.

• A gold life membership card in Local 762, San Luis Obispo, Calif., was awarded veteran member Edward Smale at a luncheon tendered in his honor. The luncheon was attended by brother projectionists who traveled from Lompoc to Paso Robles, a 100-mile coastal area under the jurisdiction of Local 762, and by trade union representatives from the San Luis Obispo and Santa Barbara counties. Also present were Earl Calvert, head of Lompoc Theatres, Inc., and T. Dickson, the city manager, who paid tribute to Smale for providing the city of Lompoc with entertainment for the past 31 years.

• The recent death of Jack Mitchell, sales manager for La Vezzi Machine Works in Chicago, came as a shock to his many friends in the industry. Mitchell had been in failing health for some time, but he seemed to be making a comeback when he was stricken.

• Anybody interested in obtaining back copies of IP, from 1944 through part of 1951, may do so by writing to Ludwig Work, 3854 W. Wilcox, Chicago 24, Ill. Work is moving to a new home next month and would like to dispose of these copies (gratis) to some interested party or parties.

• We are happy to report that Fred Thome, secretary for Local 650, Westchester County, N. Y., is now home recuperating from a recent heart attack, after three weeks in the hospital.

• The 1953 AFL Union Label Industries Show will be held in the Municipal Auditorium in Minneapolis, April 18-25. This will be the 8th all-

**ERNEST SMALE AWARDED LIFE MEMBERSHIP CARD IN SAN LUIS OBISPO LOCAL 762**

**Acting for the San Luis Obispo Local, Carl G. Cooper, 5th IA vice-president, presents a gold life membership card to veteran member, Ernest Smale. Shown above are (l. to r.): Lupe Diaz, president of 762; Monte Payne, Cooper, Smale, Clair McLaughlin, Local business representative, and Thomas Chan, secretary.**

AFL exhibition of union-made products, and it is expected to equal, if not better, the record attendance for previous shows. "These annual exhibitions help to promote wider understanding of the aims and objectives of the free trade union movement," declared AFL President Meany. "They serve to highlight the advantages of true collective bargaining between unions and employers, as symbolized by the use of the union label, shop card, and service button. . . . BE UNION—BUY LABEL."

• The many friends of Matt Kennedy, popular member of Local 273, New Haven, Conn., will be glad to learn that he is recuperating from recent surgery.

• Appointment of Marty Bennett as regional manager of the West Coast region of the RCA Victor Division was announced this month. Previously Bennett served as assistant manager of the company's Eastern region with offices in New York City. He has also been manager of RCA theatre equipment sales at the division's headquarters in Camden. He joined RCA as a theatre equipment sales representative in 1946, following 14 years association with the motion picture theatre industry, mainly with Warner Bros. theatres.

Marty Bennett, West Coast regional manager for RCA Victor Division.

• Vancouver (Canada) Local 348 held its first dinner-dance April 12 at the Flame Country Club. The Local plans to make this an annual affair.

• James A. Sipe, member of Pittsburgh Local 171 for the past 44 years, was recently named Deputy Secretary of the Department of Labor and Industry for the State of Pennsylvania. The appointment was made by Governor John S. Fine. Sipe is the father of James V., business representative for the Local.

• Fresno Local 599 recently signed agreements with four local drive-in theatres which call for a 15c per hour wage boost for the projectionists, plus two-weeks paid vacations. Dallas Page, business representative for the Local, also announced that the exhibitors agreed to a health and welfare plan to which they will contribute each month.

• A ruling in favor of the IATSE was recently handed down by the National Labor Relations Board in a jurisdictional dispute between the IA and the IBEW over the operation of front and rear screen projectors in the New York Tv studios of the Columbia Broadcasting System. CBS, in filing an unfair labor practice charge against IBEW, alleged that the union induced its members, who operate the Tv cameras, to engage in a strike action in an attempt to force the broadcasting company to assign the operation of the projectors to the electrical workers' union. The Board sustained this charge and found that the operation of these projectors "is completely disassociated from the Tv camera and all other electronic equipment, and that the operators of such projectors have no need for *intensive* electronic training."

• We were glad to learn that William G. Thompson, old-line member of Pittsburgh Local 171, has sufficiently recovered from his long illness to once again take part in the Local's activities and is now serving as a member of the executive board.

• One of the recent out-of-town visitors to the offices of IP was Stephen Karkula, member of Local 266, Jamestown, N. Y. We had quite a chat recalling the early days of the industry, and although Karkula has had a varied career, projection has always taken first place in his heart. In the early days of motion pictures when a projectionist's pay was hardly enough to keep him in "peanuts," Karkula ran pictures at night in a loft above a store, and augmented his projectionist salary by working days as a printing pressman. When conditions improved, he devoted all his time to projection work and for the past 35 years has been associated with the Shea Theatres.

Stephen Karkula ready to start the show.

In addition to his work in the theatre, Karkula operates a sound projector repair shop and has invented several gadgets for the projection room—his most successful ones being several types of carbon jaws.

His hobby over the years has been the collection of old-time motion picture equipment. This collection eventually became so extensive and took up so much space that he recently disposed of many of the pieces. His most recent sale was of a No. 1 Motiograph 35-mm projector, which he claims is still in good working condition.

## *Nat Golden to Top Bar*

Nathan D. Golden, Director, Motion Picture, Scientific and Photographic Products Division of the National Production Authority, was recently admitted to practice law before the Supreme Court of the United States. Nat has been a member of the District of Columbia bar for 20 years. His admission to practice before the Supreme Court was moved by Harold Schilz, well-known Washington attorney.

Nat, veteran of World War I, was an active, and now a lifetime, member of IA Local 160, Cleveland, Ohio.

## Huff Carbon Cooler

Tests of the Huff Hy-Candescent carbon-cooler, aimed at solving the pressing problem of getting more light on the screen for the showing of 3-D and wide-screen pictures, were conducted recently at the Loew's State Theatre in N. Y. City.

The cooler, a monel metal device attached to the carbon of a high-intensity lamp, permits the use of higher amperages in the arclamp, thereby producing more illumination, without burning up the carbon at a prohibitive rate of speed.

Manufactured by the Hal I. Huff Manufacturing Co., of Los Angeles, the cooler has often been used by drive-ins and in rear-projection process shots at the film studios, but not in indoor theatres. The cooling action is obtained by channeling a stream of water through the monel-metal device surrounding the carbon by means of a re-circulating water pump.

## IA-IP Amateur Radio Bulletins

### *1952 Contest Winners*

By AMOS KANAGA, W6BAA

Secretary, Local 409, San Mateo, Calif.

HERE they are at last fellows—the winners of the 1952 IA-IP Contest. Congratulations to each one of you because you really earned your prizes. First place goes to Brother Frank Champlain, W6PFF, Local 150, for the second year in succession. Frank is the all-time high winner and the man who has made more QSO's than anyone.

Second place goes to WϕBVO Paul Hunter, of Local 191, Cedar Rapids, Iowa. Paul did a mighty fine job and is still sending them in. Third place goes (at last) to W6UMZ Jack Steurhoff, Local 159, who sent in a whopping good list with apologies for not having more contacts.

Fourth prize goes to WϕGSW Jim Evans, Local 242, who never fails to come through with a stack of good ones. When Jim wrote, he said he didn't think he had a Chinaman's chance. In fifth place, but showing first in Class two, is Slim Kilbourne, VE3BZJ, from up there in Wallaceburg, Ontario. Slim made a very nice showing. It appears now that he worked more of the boys than he originally logged. Congratulations.

The sixth spot is split between W6LYD Don Johnson, Centralia (Wash.) Local 401, and none other than another W6 brother, George Abrams, W6FOP, of San Diego area, Local 297. The seventh spot belongs to W5DYV Paul Belian, of Local 604, a Texas man. Paul is first in Class 3 and entitled to bid on the prizes—didn't think you'd make it, did you Paul?

#### *Distributing Prizes*

Now, let's get down to business and talk about distributing the prizes. As previously mentioned, the first winner gets first choice, the second winner gets second choice and so on. Be sure to make first, second and third choices. If there is any mixup we will drop the interested party a line and straighten out the situation.

In case anyone has forgotten here is a list of the prizes and names of the donating firms: Marmax Electronics offers a Kilowatt Rothman Marmax Modulator; World Radio Labs has donated a B and W Grid Dipper, two $10 merchandise orders, one $5 merchandise order; The Gonset Co. is giving one Gonset 100%er, one Gonset Noise Clipper, and one Roll Gonset Line.

You know, this was just about the toughest contest in the last three years due to terrible band conditions. Ten meters a solid band for most of the IA gang contacts folded so flat it looked like vaudeville. Twenty was pretty good, but the big DX men in that area smeared some of us off and good old 80 meters was our mainstay.

**IA-IP CONTEST WINNERS**

| | | |
|---|---|---|
| | *First Prize* | |
| W6PFF | Frank Champlain | L. 150 |
| | *Second Prize* | |
| WϕBVO | Paul Hunter | L. 191 |
| | *Third Prize* | |
| W6UMZ | Jack Steurhoff | L. 159 |
| | *Fourth Prize* | |
| WϕGSW | Jim Evans | L. 242 |
| | *Fifth Prize* | |
| VE3BZJ | Slim Kilbourne | L. 622 |
| | *Sixth Prize* | |
| W6LYD | Don Johnson | L. 401 |
| W6FOP | George Abrams | L. 297 |
| | *Seventh Prize* | |
| W5DYV | Paul Belian | L. 604 |

#### *Hard Contest Conditions*

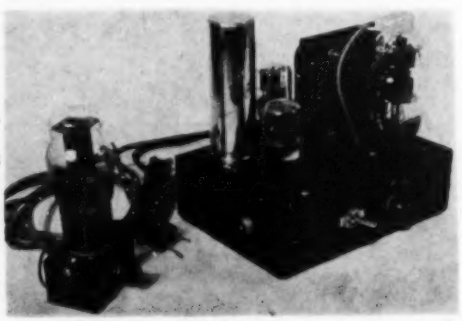
Too late in the year, the boys went on CW on 20 and 40 with a few, and a very few at that on the new 21MC band. The stations worked were all hard fought for. In comparison to the contests of other years, it must have been at least three times as difficult. The only point in our favor was the wonderfully increased list of known IA men who are radio hams, and the fact that so many of us learned about the contest through IP.

*Here and There*: Interesting card from old timer Ed Karcher, now W4DOL, of Local 482. Ed has held the same call letters in four different districts. He has been W9DOL, WϕDOL, W5DOL, and now W4DOL—a lot of DOL! . . . It looks like a lot of you will come through with your "Worked 10 IA-IP Award" in the near future. . . . Those of you who have a very few to go for your "Worked 25 Gold Award" should remember the 40 fone band is the answer. On the high end it's pretty hot out this way . . . 75 meters is still the standby. I'll sked with any one of you if you keep it under 40 per—way under! . . . By the way, business-wise, things are really looking up for us with 3-D now an established deal. We were just wondering who amongst us will come up with 4-D. . . . Who's Kiddin?

We thought we scraped the bottom of the barrel for new listings, but we were wrong as usual—not as many as some months but quite a few nice additions, don't you think? You can get a mimeographed list from us, care of IP, but we think a subscription to IP is probably your best bet. Then you automatically get new additions to the list as soon as available.

73 gang.

Available without charge (except the cost of return postage) is Eastman Kodak Company's 13½ minutes, 16-mm sound Kodachrome film entitled "Behind Your Snapshot." This reel takes the audience through Eastman's plant to see the manufacture of photographic film. It is available from Eastman Kodak's Camera Club and School Service, 343 State Street, Rochester 4, N. Y.



First prize award in the IA-IP 'ham' contest—a Kilowatt Rothman Marmax Modulator.

# History of the American Labor Movement

**Prepared by the U. S. Dept. of Labor, this history traces labor activity and legislation from Colonial times to today.**

## Chapter VIII. Expanding Political Interests

IN politics, both the AFL and the CIO as well as most of the independent unions, officially continue to adhere to Gompers' slogan of "reward labor's friends and defeat labor's enemies." Unions have been increasingly active in political campaigns in recent years and have frequently been important factors in local and national elections. Their support is usually determined by the issues and the candidates of each particular election rather than by adherence to any political party.

Labor groups also maintain representatives in Washington to indicate their attitudes on legislative proposals before Congress and to press for action which they consider desirable. Similar "legislative representatives" are maintained in most States to follow the progress of State legislatures.

Passage of the Labor Management Relations Act of 1947 (Taft-Hartley Act) stirred organized labor to renewed efforts in the field of political "education" and activity. The AFL at its annual convention in October, 1947 established "Labor's League for Political Education" to meet the "need for sound political education and effective political action by organized labor." The league was established as an independent organization, financed by contributions of AFL members and their friends.

The Political Action Committee of the CIO, which was founded in 1943 to present the CIO viewpoint on political matters and encourage worker participation in national and local elections, was also revitalized following the passage of the Taft-Hartley Act. The independent railroad unions also created their own political league. Similar committees were appointed by several of the larger national and international unions. As with the AFL, these organizations were financed by voluntary contributions from individual workers.

### *Labor's Peacetime Activities*

On the international front, labor's wartime interest in foreign affairs found peacetime outlets. Representatives of American unions assisted the United States Military Government to reorganize shattered labor groups in the occupied countries. Food, clothing, and supplies were furnished to help relieve suffering and destitution. Representatives of the AFL and the CIO joined in March 1948 with labor groups from Marshall Plan countries in a significant conference to consider the participation of labor in the rehabilitation of Europe.

With the establishment of the Economic Cooperation Administration to handle Marshall Plan aid, a number of AFL and CIO representatives were appointed to assist in the labor phases of ECA. Both the AFL and CIO have international policy committees to guide and coordinate their international activities.

### *AFL Nixes 'World Federation'*

In the autumn of 1945, labor organizations from 54 countries (including the CIO, the British Trades Union Congress, and the Soviet Labor unions) formed the World Federation of Trade Unions. The American Federation of Labor declined to participate in the formation of the WFTU on the ground that the Soviet unions did not constitute a free and democratic trade-union movement. Early in 1949, the CIO together with the British Trades Union Congress and several other national groups withdrew from the WFTU which had become a tool of international communism.

Other union enterprises include life insurance and health benefit and pension programs, recreational activities, cooperatives, labor banks, credit unions, radio programs, and housing projects. In recent years the organized labor movement in the United States has manifested an increasing interest in social and political problems, both local and national in scope, and in international affairs.

**[TO BE CONTINUED]**

### Cinerama Expansion Planned

Plans to bring Cinerama to many additional cities throughout the country are now under way, it was reported recently when the Cinerama organization placed an order for 60 additional Excelite projection arc lamps with National Theatre Supply. The National Excelite, a 75- to 130-ampere, high-intensity, reflector-type projection arc lamp, is said to have been selected by Cinerama after much testing because of its ability to maintain constant light intensity and constant color temperatures with a minimum of manual adjustments.

# Wide-Angle Lenses—Coming and Going

**A friendly critic submitted a recent publication of the U. S. Bureau of Standards relative to wide-angle *photographic* lenses which, it seemed to him, disproved certain statements appearing in IP. An eminent authority on optics herewith contributes an opinion on this phase of wide-angle-lens *projection*. Coming and going would seem to constitute opposite directions.**

THERE is absolutely no conflict between the recent report of the Bureau of Standards on wide-angle aerial photographic lenses and the statements made in IP's "Monthly Chat" (p. 3) for March last. In aerial photography with wide-angle lenses the requirement is to get something registered on the film for an exposure time which will not over-expose the center of the film. Therefore, by using a so-called negative distortion they compress the edges of the film over a small area of the film and are able then to register an image.

In printing this negative they can eliminate the distortion and by various means are able to *equalize* the light on the print so as to obtain a *uniform* printing on the paper. This is a printing process, *not* projection of motion picture film, therefore it does not apply to the field referred to in your article. What means they use to equalize the light in the printing process is now known to me, although the most practical one is to reduce the exposure at the center of the field either by using filters or masks.

### *Flatness of Field?*

One drawback of the negative distortion is that the resolving power at the edge of the field is very much reduced, and if you have ever seen any pictures taken with wide-angle lenses, you will realize that the fading out of the resolving power will not be satisfactory for motion picture projection.

Another drawback, mentioned in your article and which is not offset by anything mentioned in the Bureau of Standards publication, is that the speed of wide-angle lenses is rather low.

Your article does not say anything which is not technically correct, and this wide-angle proposition resolves itself to the question of how much light and how much *definition* you can sacrifice in order to increase the *size* of the screen. No doubt the public will have to be the judge, and we shall have to await their verdict.

# Outline of 16-mm Projection

**Presenting some comments on the history and operation of 16-mm projectors, abstracted from a very complete text-book on the subject.***

III

TO DETERMINE the lumens output required from a projector for any desired screen brightness, the following formula may be used:

$$\text{Lumens required} = \frac{\text{Desired brightness (in foot lamberts)} \times \text{Area of screen (in square feet)}}{\text{Reflection coefficient of screen (expressed as a decimal)}}$$

The light output mentioned above represents about the best obtainable from present designs, with most commercial machines falling short of the above performance by varying amounts. All manufacturers are prepared to guarantee the lumens output of their machines under specified conditions. It is well for a purchaser to obtain the information concerning the machine he proposes to purchase as a part of the manufacturer's guarantee of performance.

Although screen brightness as low as 5 foot-lamberts are considered passable, really good performance requires brightness in the order of 10 foot-lamberts, which will match quite closely the brightness found in 35-mm motion picture theatres. Table II shows the required output of a projector in lumens for a number of different sizes of screens having the usual 70% reflection factor as applicable to a used matte screen in good condition. In all cases, the height of the screen is three-quarters of its width.

### *Kodachrome Brightness Level*

Higher rather than lower screen brightness are desirable for the projection of Kodachrome and other integral tri-pack positives. There is much more detail in the shadows of Kodachrome dupe prints than in the highlights; for this reason somewhat higher screen brightness for such film are preferable to the more customary over-exposure of the color duplicates that is resorted to by the film laboratory for the purpose of obtaining better projection with inadequate screen illumination.

As can be seen from the table, a 750-w. projector cannot be expected to do more than fill a 6-ft. screen. If a larger screen is to be filled, an arc projector is required. Properly designed arc projectors are available that can deliver over 1000 lumens, and are suitable for a screen of approximately 10 ft. in width.

### *Picture Projection and Audience*

The widely used sound projector of the 750-w. lamp type (equipped with a 2-in. lens) will be presumed as a reference. The projector is customarily placed near the rear-center of the projection space.

A matte screen (also called diffusive or flat-while) should be used in every instance possible, since it provides the widest angle of satisfactory viewing. A screen is considered dirty if it appears dark in comparison with a clean sheet of writing paper, and should be replaced, for it is wasting from one-quarter to as much as one-half of the light thrown upon it by the projector.

### *Auditorium Light Level*

Good tonal quality of the picture is impossible if the room in which the audience is situated is not adequately darkened. A general room light of about 1/10 ft.-candle is not harmful; this is the illumination level at which it is difficult but not impossible to read ordinary newspaper type. If the walls of the room are light-colored and the room is small, this general level of illumination may be reached by the light "sprayed about" by the screen itself during projection.

[TO BE CONTINUED]

*Cond. from "16-mm Sound Motion Pictures," by W. H. Offenhauster, Jr., published by Interscience Publishers, Inc., New York.

**TABLE II. Lumens Required for Different Screen Sizes with Light Level of 10 Foot-Lamberts**

| Screen width, in. | Lumens output required | Screen width, in. | Lumens output required |
|---|---|---|---|
| 40 | 119 | 84 | 525 |
| 50 | 186 | 114 | 977 |
| 67 | 334 | 138 | 1410 |

## Industry Veteran Ushers In a 'New Theatre Era'

Herewith W. W. Simons, one of the original Vitaphone engineers, since associated with ERPI and Altec introducing the Westrex triple-track magnetic reproducer which is being supplied by Altec Service Corp. for stereophonic installations throughout the country for "House of Wax" (Warner Bros.), as well as installations for CinemaScope presentations from 20th-Century Fox. These reproducers are also being used by Altec on all installations for the triple-track, magnetically-recorded stereophonic pictures being released by major studios.

Says Simons: "I am proud to introduce this new phase of sound equipment, since I had the same pleasure 25 years ago in introducing the first sound equipment to this industry as a Vitaphone staff member. Since then I have been with ERPI, then Altec Service, and now Altec Lansing out here on the Coast. I feel that we are on the eve of a new era in show business. My very best regards to my projection boys throughout the country."

W. A. (Bill) Simons, industry veteran of the Vitaphone and ERPI days and now with Altec Lansing Corp. on the West Coast, is shown standing by an A-L three-track magnetic recorder which ushers in a new era in sound.

"Gates of Power," 16-mm sound film showing hydro-electric dams built by British engineers all over the world, and associated beauty of scenery and running water, has been made available by British Information Services. It runs 19 minutes, rents at $2.50, sells at $55.00.

## NEWS PROJECTIONS

COLUMBIA Pictures has adopted an aspect ratio of 1.85 to 1, and 3-channel magnetically recorded sound for all future productions, according to Harry Cohn, president. He also reports that the studio now has a camera which will provide prints for flat, 3-D or large-screen projection. . . . Progress for the CinemaScope wide-screen method of projection is indicated by a recent batch of equipment orders, totalling 118 houses, 20th Century-Fox announced.

* * *

Paravision, Paramount's wide screen process, will receive its premiere soon when "Shane" opens at the Radio City Music Hall in New York. Aspect ratio in this case is 1.66 to 1. "Shane" was filmed in the normal flat process with conventional screen proportions, but a change is effected by the use of special projection lenses. . . . Jack Warner announces that Alfred Hitchcock's next picture, "Dial M for Murder," will be shot in 3-D. WarnerColor and stereophonic sound will also be employed. . . . Warner Bros. also made news this month with its aggressive New York television promotion for the 3-D, "House of Wax." Twelve 10- and 20-second spots were used on WNBT and WABC-TV.

* * *

Before very long, color television may be competing with 3-D and wide-screen movies for public attention. CBS is reported to have abandoned all plans to exploit its non-compatible system of Tv color, which won FCC approval a few years ago even though it left the set manufacturers cold. The way is now open for early FCC hearings on the compatible system developed by RCA. This system poses fewer problems to the industry because existing Tv sets can pick up compatible color transmissions in black-and-white. . . . RKO Radio has selected "Louisiana Territory" as the final title for its first 3-D picture. Filmed with the Norling Camera, it will be released May 30.

* * *

A good example of the impact of 3-D on the exhibition business is the announcement by Natural Vision that it has shipped 12 million polaroid filters to more than 600 theatres. The company re-

Super Snaplites are better indoors or out. Sharper Pictures, Greater Contrast, More Light, Better Definition all add up to happy patrons. Make your Movies Better Than Ever; use Super Snaplite lenses. Super Snaplite Projection Lenses give a true speed for f/1.9 in every focal length up to 7 inches. Ask for Bulletins 207 and 209.

**Also Series II SNAPLITES with a speed of f/2.0**

**KOLLMORGEN** *Optical* **CORPORATION**

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**NEW YORK OFFICE: 30 CHURCH ST., NEW YORK 7, N. Y.**

Invest In
**U.S. DEFENSE BONDS**
Now Even Better

ports that it now has 83 million on order with the Polaroid Corp. . . . First public tests of 3-D at a drive-in occurred recently in Chicago where the Twin Open Air Theatre showed "Bwana Devil." RCA Super-tensity lamphouses, operating at 180 amperes, provided the illumination, and airjet blowers were used to cool the film.

* * *

Universal-International is preparing to promote an all-purpose screen with an aspect ratio of 2 to 1. U.I. thinks that an 18 by 33 foot metallized screen with some curvature might be an economical answer for most theatres, enabling them to play pictures filmed in most of the new processes. . . . Single projector 3-D is still a possibility. King Bros. announced in Hollywood that it would distribute a new German 3-D process developed by Zeiss Icon that uses only a single strip of film and a single projector. A special device attached to the projection lens is said to produce stereo. Polaroid glasses are required.

---

**The advent of 3-D and wide-screen motion pictures has made more important than ever test films for visual and sound check-up. Address the SMPTE at 40 West 40th St., New York 18, N. Y.**

## Too Far, Too Fast?

**Condensed from THE FILM DAILY**

If the increasing frequency with which stories and feature articles on pay-as-you-see TV appearing these days are to be taken at face value, one may expect its advent to be the next big development in the video field. It could be, rather than color, Tv's answer to 3-D, especially if a way is found to give a stereo effect to video.

Tv today, with the sponsor the only source of income, is approaching the point where the production and time costs are too great for the advertiser to absorb. Considering that in a comparatively few years, the budget for Milton Berle's show has jumped from below $20,000 to $150,000, the latter the figure for next season, you realize that Hollywood isn't the only place where costs can get out of line. And bear in mind that as Tv stations increase, the overhead must mushroom way beyond the present level.

Who is going to pay these astronomical costs? The 15 advertisers now said to be bankrolling more than 50% of network shows? Well, what do *you* think, with Texaco bowing out as Berle's sponsor?

### *Pay-as-You-See Gaining*

Eugene F. McDonald, Jr., Phonovision's pappy, and not a few others who think likewise, have been saying for some time that Tv needs an added source of income.

Get this: the American public, having had a taste of top Tv shows, won't be satisfied with the shoddy, even if free. But it is prepared to pay—as we have been learning—for quality entertainment, including that for which higher box-office scales are in effect.

It has been many months now since the FCC received the Zenith petition asking its blessing upon subscription Tv. The hearing on the Zenith petition may not come before 1954.

At any rate, subscription Tv advocates are confident that there is no legal bar to it. International Telemeter, allied to Paramount is confidently predicting, via a piece in "Look" magazine, that in five to ten years not only will you get top entertainment of all kinds through its push-button set attachment, but it also will (quoting "Look"):

"1. Transmit to your home each morning or evening an electronic newspaper edited in length and subject matter to fit your own desires.

"2. Let you vote in your own living room before breakfast, then shoot your vote into a mechanical brain which will have complete election results all ground out before you're ready for a second cup of coffee.

3. "Take guesswork and fancy double talk out of public-opinion polls.

4. "Let you put a $2 bet on a nag from your living room, electronically feed your bet through a track's pari-mutuel machines to make everything nice and legal, then cut your Tv set to the track so you can see the race you bet on. (An electronic bookie—yes?")

Protect the HEART of your theatre...
1928 25 1953
YEARS OF PROMPT, EFFICIENT, COURTEOUS SERVICE
and you protect your box office
RCA Service Company, Inc.
A Radio Corporation of America Subsidiary
Camden, N. J.

SPLICES NOT HOLDING?

Film breaks are costly. Play safe by using

**JEFRONA**
All-purpose CEMENT

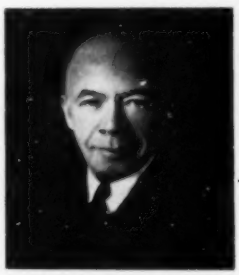
**Has greater adhesive qualities. Don't take our word for it. Send for FREE sample and judge for yourself.**

**CAMERA EQUIPMENT CO.**
1600 Broadway New York 19, N. Y.

## PERSONAL NOTES

D. C. COLLINS has been named vice-president of Altec Service Corp. following his retirement from Western Electric Co. and Westrex Corp., it was announced by G. L. Carrington, president of Altec.

Mr. Collin's experience in the motion picture field extends back for more than 25 years when he joined Electrical Research Products, Inc., upon its formation, later advancing to the position of vice-president



D. C. Collins, recently appointed vice-president for Altec Service Corp.

and member of the board of directors. After ERPI's merger with Western Electric he continued as manager of the ERPI Division. He has served as a vice-president and director of Westrex Corp. since 1941, and was a member of the board of directors of Altec Service and Altec Lansing since their formation.

NATHANIEL M. MARSHALL has been appointed manager of TV equipment sales by General Precision Laboratory, Inc., Pleas-

Nathaniel M. Marshall, TV sales manager for General Precision Lab.

antville, N. Y. Previously he had been assistant manager, having joined GPL in 1950 as a commercial engineer.

A graduate of Brown University in 1943, Mr. Marshall was an electronics officer in the Naval Air organization, specializing in radio and radar. He continued with the Navy in a similar capacity as a civilian, and in 1948 was transferred to head up a TV research project.

### TESMA's 20th Ann'y Show

New equipment for 3-D and wide-screen motion pictures will be featured at the Theatre Equipment and Supply Manufacturers Assn. trade show to be held in Chicago from October 31 to November 5. This year's show will mark the 20th anniversary of the equipment makers' organization. It was also announced that the Theatre Owners of America and the Theatre Equipment Dealers' Association will also meet in Chicago at the same time and three groups will hold joint sessions.


NO OTHER Drive-In Screen Compares with...

Permascreen

AMERICAN AND CANADIAN PAT. APPLIED FOR

...and HERE'S WHY!

- The ONE SCREEN that lasts for years and years and years!
- Practically no maintenance cost — because of long-wearing vitreous enamel finish!
- Up to 40% MORE REFLECTED LIGHT — for brighter, sharper pictures with uniform reflection at all times!
- Drive-In pictures with best of indoor quality!
- Can be purchased on a convenient time payment plan!

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**LOCAL 162, SAN FRANCISCO, CALIF.**

Norman E. Moynahan, *pres.*; W. E. Butler, *1st vice-pres.*; Paul M. Artigues, *2nd vice-pres.*; Everett W. Holladay, *3rd vice-pres.*; Robert M. Wilson, *4th vice-pres.*; James T. Luther, *5th vice-pres.*; Frank W. Costello, *sec.-treas.*; John A. Forde, *bus. rep.*; Antone J. Salemi, *sgt-at-arms.*

**LOCAL 371, EDMONTON, ALTA., CANADA**

Al Davies, *pres.*; George Cox, *vice-pres.*; D. McCardia, *sec.*; T. B. Howden, *treas.*; H. Hodgkinson, *bus. rep.*

**LOCAL 398, MEADVILLE, PENNA.**

Glenn Hayes, *pres.*; Len Wheeler, *vice-pres.*; August F. Bodisch, *sec.-treas.*; John P. Geiger, *rec.-sec.*; Russell Bortles, *bus. rep.*; Wheeler, Bortles, and Hayes, *board of trustees.*

## OBITUARIES

JOSEPH L. MARKOFF, 60, member of St. Louis Local 143, died last month shortly after he was stricken with a heart attack while working in his garden. Markoff was formerly a member of Philadelphia Local 307, but transferred his membership to the St. Louis Local about 12 years ago.

HERBERT JOHN HILLS, executive board member of Toronto, Local 173, died recently at the age of 70. A member of the Local for the past 34 years, Hills took an active part in all union affairs until shortly before his death. He was a charter member of the Local, an officer of the International Projectionists Society, and a member of the Pioneers Club of Canada.

CARL KRUMREI, SR, 65, member of Omaha Locals 42 and 343, died at his home after a lingering illness. Krumrei was a former official of Local 343, and was well-known in the motion picture industry throughout Nebraska.

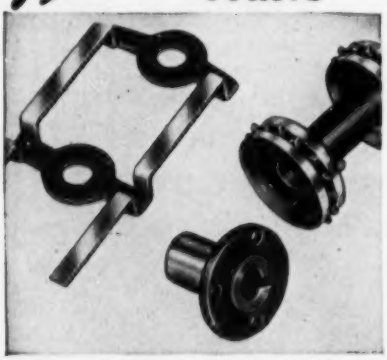
## Big Profit in 3-D Viewers

Just how profitable 3-D motion pictures will be to studios and exhibitors is open to question, but there is a man in Cincinnati who stands to profit heavily as long as this type of movie is turned out. That man is John F. Dreyer, a soft spoken engineer, who perfected a method of polarizing glass in 1946. Last December he received a phone call from Hollywood asking if his tiny factory can turn out 50 million pairs.

Dreyer now expects the gross business of his firm Polacoat, Inc., will jump from $50,000 last year to at least $1,000,000 in 1953. Hollywood found it necessary to beat a path to the door of the little firm because Dreyer developed and holds patents on one of the two known methods of polarization.

In the Polacoat process, glass, plastic or some other dense substance is rubbed with rouge, a powdered polishing agent, in the direction that the lines of polarization are desired to take; then the rouge is washed off and a special black liquid applied. Dreyer describes this liquid as a dichroic liquid crystalline solution. The coated glass goes under a heating bar and the liquid that stays on the surface passes through a stage in which all the light-absorbing molecules line up on the field that the rouge treatment has set up.


**Free PROJECTOR PARTS**



No, we're not giving them away—but, if Projection equipment is maintained the resulting patron satisfaction will boost Boxoffice sales to more than offset the cost—Your theatre will earn more and at the same time earn an enviable reputation for good showmanship.

**LAVEZZI MACHINE WORKS**
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**Chicago 44, Illinois**

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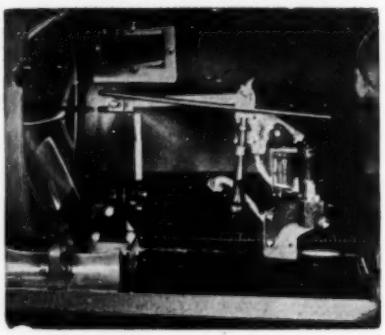
**THE CRON-O-MATIC**
***Fully Automatic***
**CARBON SAVER**

for Ashcraft "D" and "E", Brenkert-Enarc, Peerless Magnarc and Strong Mogul lamps.

Burning average lengths (3¼") down to ¾" saves 2½" or 22.2% of the carbon cost.

Uses positive carbon stubs *of any length*, without preparation. When entirely consumed, the new carbon goes into use without losing the light, or otherwise affecting lamp operation.



No more "Will it burn a full reel" guessing.

**Only $52.50**

If your dealer can't supply you, order direct.

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2454 W. Stadium Blvd. Ann Arbor, Mich.
( ) Send literature on the Cron-O-Matic
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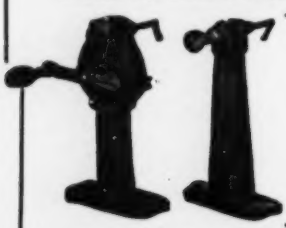
EXPORT: Frazar & Hansen, Ltd.
San Francisco, New York, Los Angeles

**WENZEL PROJECTOR CO.**
Manufacturers of Many Types of
**FILM REWINDERS**



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16 M/M
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Film
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*Write for Illustrated Brochure*

Pro-50 Projector Head

**WENZEL PROJECTOR CO.**
2505-19 S. State St. Chicago 16, Ill.

## Walker Metallized Screen for Both 3-D and Flats

Projectionists who may be called on to advise exhibitors concerning the metallized surface perforated projection screen needed for 3-D showings will be interested in the specifications of the Walker Polarized High-Intensity screen distributed by National Theatre Supply. This screen is claimed to provide good light distribution throughout a theatre and to be very serviceable for both 2-D and 3-D films, a considerable economy factor.

In the past, some members of the craft have voiced doubts about metallized screens on the ground that they are too directional in their reflectivity for use in wide auditoriums or with tall balconies because they concentrated too much light in a small percentage of the seating area.

To make its point with regard to the adaptability of the Walker metallized screen to large, wide theatres, National Theatre Supply cites the case of the Roxy Theatre in the heart of New York's theatrical section. Charles Talley, chief of projection there, states that he gets satisfactory distribution of reflected light throughout all of the theatre's more than 5,000 seats, and at the same time, gets sharper resolution than with the usual white diffusive screen.

The Roxy did not install this screen out of any pressing need to prepare for 3D, but because they wanted it, Mr. Talley states. Improvements in the light distribution of this type of screen have made its use possible and desirable in auditoriums that could not conceivably have used older types of metallized screens without extremely poor light distribution.

Theatres not immediately planning to show 3-D films, but where purchase of a new screen is contemplated, have a special interest in the ability of modern metallized surface screens to serve houses of every type. Buying a metallized screen now will eliminate the need to purchase another screen just for 3-D films which absolutely require this type of screen.

In physical construction, the Walker High-Intensity screen surface consists of metal flakes embedded in a plastic binder. The binder is said to be chemically in a state of maximum oxidation; it cannot be oxidized further, and therefore, will not burn and cannot turn yellow. The reflecting flakes are an aluminum alloy which the company claims is impervious to corrosion and cannot change in appearance or efficiency.

## B. & L.-Fox CinemaScope Deal

An agreement to supply 20th Century-Fox with large quantities of anamorphic optical units for CinemaScope has been announced by Bausch & Lomb Optical Co.

The units B. & L. will produce for CinemaScope are known technically as "anamorphic adapters." CinemaScope requires one camera and one projector. The taking unit squeezes a wide image onto regular 35-mm film, and the projection unit spreads it out again so that it fills a screen about twice as wide as the normal one. Stereophonic sound is used to heighten the illusion of reality.

First, the optical firm will produce three types of units, one for taking cameras, and two for projectors. The units are designed to fit B. & L. Baltar and Super Cinephor lenses. The projection lenses will outnumber taking lenses by a large ratio. Fox plans to make taking lenses available to other producers as soon as they are manufactured. The studio has also announced that its entire program, consisting of high-budget pictures, will be made for CinemaScope.

### *All-Out Production*

Work on the B. & L. contract is on forced draft; with all personnel having been actively engaged in the project for the past two months to get it on a production basis.

Normal B. & L. production schedule for such a new system would call for a design period of several months before manufacturing could even be started. Instead, the anamorphic units have been designed in a matter of weeks, with deliveries on the first batch scheduled for June 1.


Film-Weld
TRADE MARK
Successor to Film Cement

• The NEW, improved, positive method of permanently patching all types and makes of film—8mm., 16mm., 35mm., Trucolor, Technicolor, Kodachrome, Nitrate and Safety Film.

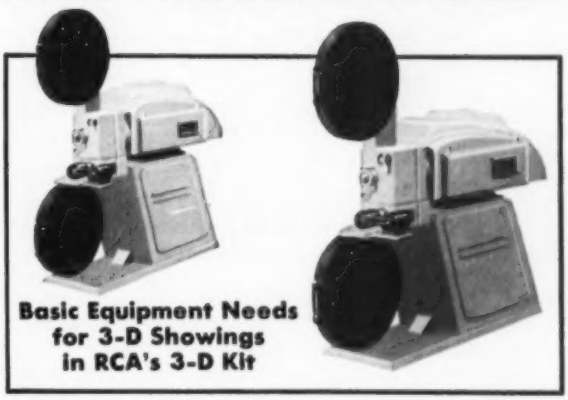
Used and endorsed by Projectionists in countless theaters.

specifically for *lasting* Patches.

ESSANNAY ELECTRIC MANUFACTURING CO.
1438 North Clark Street Chicago 10, Illinois



FAST 3-D CONVERSION



Basic Equipment Needs for 3-D Showings in RCA's 3-D Kit

Now, in a single, low-cost, quick-conversion kit, RCA supplies everything you need for easy conversion to three-dimension films. These few simple items equip your present projectors to handle all 3-D systems now in production:

1. Two selsyn motors, the most dependable interlocking method—(with mounting plates).
2. Silent chain and sprockets for connecting motors.
3. Blowers for port filters.
4. Upper and lower 5500-foot film magazines.

Ask your RCA Dealer about RCA's 3-D Kit—and—for flawless 3-D presentations—ask him about RCA's seamless silver screen.

RCA
THEATRE EQUIPMENT
RADIO CORPORATION of AMERICA
ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.

## SMPTE TO FEATURE 3-D

*(Continued from page 21)*

normal projection prints, the stray-light brightness of the screen should not exceed approximately 0.3 per cent of the screen brightness.

### WESTREX STEREOPHONIC RECORDING AND REPRODUCING FACILITIES

**John G. Frayne and E. W. Templin**
***Westrex Corp., Hollywood, Calif.***

This paper describes new stereophonic recording channel equipment including a 6-position mixer and portable 3-channel recorder. For re-recording the previously described triple-track recorder-reproducer is available. For review room and theatre reproduction, a theatre-type dummy equipped for 3-channel stereophonic reproduction is described.

### THE MAGNESCOPE

**Rowland L. Miller**
***Magnescope Corp., Culver City, Calif.***

Magnescope is a visual monitor for magnetic tape. It gives visual presentation of the information recorded on the tape without employing auxiliary equipment such as movable scanning heads, amplifiers, etc. The presentation is a variable-area display and thus gives indication of frequency and amplitude. The display remains stationary as long as the tape is motionless in the Magnescope, but movement of the tape is accompanied by corresponding movement of the display.

Magnescope consists of a unique cathode-ray tube and its associated power supply. The cathode-ray tube is so constructed that the magnetic fields from the tape directly influence a beam of electrons which produces the variable-area display.

### PROCESSING 16-MM COLOR FILM WITH A SILVER SOUND TRACK

**John Fritzen**
***Cinecolor Corp., Burbank, Calif.***

A description is given of the approach and final solution to the development of a silver sound track on 16-mm Cinecolor for use with the lead sulfide photocell.

### MATCHING DENSITY TO PRODUCTION

**Howard T. Raffety**
***Cinecolor Corp., Burbank, Calif.***

Densitometry at Cinecolor matches use as closely as possible. To this end, densitometry of material to be used on optical printers is on a "specular densitometer," and densitometry of sound tracks is on a "sound reproducer densitometer." This paper describes these two densitometers.

### IMPROVED COLOR FILMS FOR MOTION PICTURE PRODUCTION

**W. T. Hanson, Jr., and W. I. Kisner**
***Eastman Kodak Co., Rochester, N. Y.***

A number of negative and positive color films of the integral tripack type have been made available to the industry in recent years. Four materials are described which can be used in a system of this type or which can be used in conjunction with existing commercial color motion picture processes.

### OPTIMUM SCREEN BRIGHTNESS FOR VIEWING 16-MM KODACHROME PRINTS

**L. A. Armbruster and W. F. Stolle**
***Eastman Kodak Co., Rochester, N. Y.***

A light, normal and dark Kodachrome duplicate was made from each of three Kodachrome Commercial Film originals which were exposed normally, one stop under, and one stop over the normal. The best print of each scene and for each camera exposure was selected by a group of judges for each of six screen brightnesses ranging from 2- to 20 ft.-L. The best prints were then viewed at the six screen brightnesses. The optimum screen-brightness range was 9 to 15 ft.-L.

### PICTURE QUALITY OF MOTION PICTURES AS A FUNCTION OF SCREEN LUMINANCE

**Lawrence D. Clark**
***Eastman Kodak Co., Rochester, N. Y.***

The relationship between the quality of projected motion picture prints and screen luminance has been investigated. The relative quality of optimum prints evaluated subjectively was found to increase with screen luminance until the luminance reached approximately 20 ft.-L., and then to decrease at the higher screen luminance levels. A range of screen luminance from about 10 to 45 ft.-L. gave picture quality within 10% of the best obtained.

### A THEATRE LOUDSPEAKER SYSTEM WITH IMPROVED DIRECTIONAL QUALITIES

**J. E. Volkmann, S. A. Caldwell and A. J. May**
***RCA Victor Div., Camden, N. J.***

A new type of theatre loudspeaker system in which improved directional properties have been incorporated is presented. The new loudspeaker produces a better ratio of direct to reflected sound energy over the entire frequency range in the audience area of a theatre than that obtained with conventional designs. This results in better presence and reduces the problems of crossover region phasing, without in any way affecting the frequency range or power handling capabilities.

the man with 200 brainpower*

**ALTEC SERVICE CORPORATION** has more than 200 engineers actively engaged in the servicing of motion picture projection and sound equipment and the investigation of every new projection and sound technique including theatre television. Their knowledge of new equipment and improved servicing techniques is checked at Altec's laboratories and distributed to every Altec Service Man. This circulation of information provides your local Altec Service Man with the useful experience and knowledge of more than 200 fellow engineers. His warehouse of knowledge is your assurance of the right service at the lowest practical cost.

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GOLDE AUTOMATIC ENCLOSED REWIND ALWAYS DEPENDABLE!

The operators' favorite . . . silent and safe! U. L. approved. Eliminates fire hazard. Positive friction . . . can't clinch film. Tilt-back case . . . reels can't fly off. Microswitch safety cut-off . . . when door opens or film breaks, motor stops.

• At better theatre supply dealers.

GOLDE MFG. CO. 4888 North Clark Street Chicago 40, Illinois

## TYPES OF THEATRE SOUND REPRODUCERS

(*Continued from page* 12)

tween the kinetic scanner and the sound sprocket should be somewhat slack when the projector is running at normal speed; and this desirable condition can be established only when the scanner functions properly.

In most cases the projectionist can readily tell whether or not the entire projector mechanism is running at a non-uniform speed. If he is certain that some cause external to the soundhead is responsible for wows, he should use his discretion as to the advisability of shutting down the show in order to find out if the picture mechanism is binding. But, first of all, the temperature of the driving motor should be checked.

### *The Cause of 'Flutter'*

"Flutter" represents more rapid variations in film speed that wows. All variations from 3 to 20 cps may be classed as flutter. A little has already been said anent flutter caused by the design of certain old-style soundheads; and to this we can only append the dismal comment that the projectionist can do little or nothing about it except yell for new soundheads and pray that he gets them before bad sound closes the theatre—permanently.

Flutter in rotary-stabilizer and other kinetic-scanner sound-heads, on the other hand, is usually curable because it is most frequently caused by flat spots on worn pressure rollers, especially on those of the felt-faced type. It is not a bad idea to heed manufacturers' advice to leave the pressure-roller assembly open when there is no film in the projector—though most of us have developed the habit, over the years, of leaving the projectors alone after the last two reels have been run off at night.

In rare cases some accident may have befallen the scanning drum or its shaft, causing the drum to wobble as it revolves. The wobble emerges from the speakers as a warble which only new parts can cure. A deposit of dirt or caked emulsion and film wax on the drum is a cause of flutter that is never found when conscientious projectionists have charge of the equipment. The importance of cleanliness in the maintenance of soundheads is repeatedly stressed by all manufacturers and service engineers.

### *When Actors 'Gargle'*

Whenever flutter occurs at a rate of 20 to 80 cps, it is called "gargle." It transforms the most velvety of voices into what sounds like a tonsil-flushing operation performed by the halitosis-plagued heroine of mouth-wash advertisements. Curiously, it is the heroine, not the hero, of the flickering drama who gargles, since only the higher frequencies of sound give noticeable evidence of the defect. She may get her man in the last reel; but we cannot help but feel sorry for the fellow in theatres where gargly sound prevails.

Gargle usually occurs in the older type of soundhead, being caused by bent wheel shafts or lop-sided sound sprockets. The only sure cure is replacement of the offending part; and this, as the writer has found, is usually the flywheel (or sound-sprocket) shaft. The damage may come about through force injudiciously applied to the shaft when removing and replacing sound sprockets. These sprockets are frequently exasperatingly stubborn—they simply hate to be changed. But a little patience and extra time devoted to the


**Available At All Theatre Supply Dealers**

Make Your Next Film Cement Order

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You'll Be Glad You Did!

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THE ONLY UNION MADE FILM CEMENT

FISHER MANUFACTURING CO.
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**HUFF HYDRO CARBON COOLERS**
**. . . Gives You These Important 3-D Advantages**

MADE FOR MOST ALL MAKES OF LAMPS

- MORE LIGHT
- SLOW CARBON BURNING
- COOLER OPERATION
- SIMPLE INSTALLATION

Get 6000 to 7000 feet of film from one trim of carbon. In most cases this can be accomplished with your present lamps.

*Write today for further information on your 3-D light problems.*

**HAL I. HUFF MFG. CO., 659 Jefferson Blvd., Los Angeles 7, Calif.**

**REEL-END ALARMS**
**Jackson's Patd. Automatic!**
**Can't Scratch Film! Foolproof! Lasts a Lifetime! $18.50 per pair On Money Back Guarantee**
*Order one at all Dealers or write to*
**AMERICAN THEATRE SUPPLY CO., INC.**
2300 - 1st AVE. AT BELL, SEATTLE 1, WASH.

**CLAYTON BALL-BEARING EVEN TENSION TAKE-UPS**
***For all projectors and sound equipments***
All take-ups wind film on 2, 4 and 5 inch hub reels.
Silent Chain Drives
**THE CLAYTON REWINDER**
For perfect rewinding on 2000-foot reels.
**CLAYTON PRODUCTS CO.**
31-45 Tibbett Avenue New York 63, N. Y.

task will do the job without springing the shaft. It seems almost unnecessary to warn against sandpapering the shaft in order to make a sprocket go on easier. This stratagem invariably results in a lop-sided sprocket positioning and the creation of gargle.

The flywheel end of a sound-sprocket shaft will not stand too much abuse, either. In certain instances gargle has been caused by rough handling of soundheads during installation.

### *Higher Frequency Distortion*

The term "whiskers" applies to sound flutter of 30 or more cycles per second. The most interesting thing about whiskers is its uncanny ability to deceive many projectionists when they first encounter it. It does not affect low and intermediate frequencies at all; but to the higher frequencies this form of flutter imparts a raspy quality to the sound, often mistaken for the effect of a bad tube or an out-of-focus optical unit. Talented sopranos are made by whiskers to sound like gravel-throated bluejays, and violins sing like saws being filed. The scientific test for whiskers involves the playing of a 3,000-cycle test film and observing the wave-form of the output on the screen of an oscilloscope. For routine checks the oscilloscope may be dispensed with — a trained listener is able to detect very small traces of "raggedness" in the 3,000-cycle tone. which has about the same pitch as the highest "G" which can be played on a violin.

There exists a special type of electrical non-linear distortion, called intermodulation, which imitates the effects of gargle and whiskers very closely when more than one tone is being reproduced. It will not, therefore, appear during the playing of a test film having but a single frequency recorded on it. Intermodulation arises in the amplifiers: it is mentioned here in order to place the projectionist on guard against snap judgments anent the cause of poor sound quality.

### *Cause of Intermodulation*

Intermodulation is said to occur whenever a number of tones interact upon one another to produce additional, and spurious, tones not present in the sound record. When these are in harmonic relationship with the recorded tones they are scarcely noticed, but unfortunately, this is not always the case. When the spurious tones clash with the recorded tones, producing discords, they become extremely objectionable. In fact, intermodulation is the principal cause of public dissatisfaction with the tone quality of cheaply manufactured radios and home phonographs. Once in a while intermodulated sound is recorded on film and disk, the trouble arising from electrical, photographic, and mechanical causes. Commercial disk records are notorious offenders. So also are certain makes of electric organ, wherein the purity of the individual tones is spoiled by intermodulation arising in the complicated electrical networks in the organ itself.

It is difficult to describe the effects produced by intermodulation. Imagine that you are listening to a musical recording in which a violin is playing. Assume that the tone of the violin is clear and natural. Now assume that a bass instrument of one sort or another begins to play along with the violin. The violin at that point becomes "gargly" and raspy. That is an example of intermodulation in its simplest form. Suppose that an entire orchestra is playing, the fundamental tones and harmonics of all the different instruments intermodulating, giving a bewildering number of spurious "sum and difference" frequencies! The result is sound that must be described as blurry, fuzzy, etc.

As the reader can readily appreciate, the peculiarity of intermodulation lies in the fact that a *single* recorded tone is reproduced with perfect clarity, all other factors being satisfactory. It is only when *several* tones are sounded together in the recording that the reproduction becomes "clashy," "whiskery," mushy, etc.

### *Modern Amplifier Standards*

Modern theatre amplifiers are so designed, now that degenerative feedback circuits are standard practice, that all distortion *except possible intermodulation* is kept under 2 per cent of the total power output. Accordingly, one make of theatre amplifier may give better sound than another make, even though both have the same low distortion-rating of 2 per cent or less. The reason is that intermodulation is ignored in these distortion-ratings. Measurement of intermodulation is a more complicated operation than the measurement of distortion products generated by a single test frequency.

More and more the manufacturers of high-quality theatre sound equipment are beginning to direct serious attention toward minimizing the intermodulation effects which the public finds very objectionable. At the present time perfect reproduction of a full symphony orchestra—reproduction so natural that it cannot be told from the real thing even by expert listeners—is rarely encountered.

[THE END]


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VARIETY

Wednesday, January 7, 1953

# Top Grossers of 1952

Here are 1952's best, that is, all films which went into release during the calendar year which have, or will have, grossed $1,000,000 and over in domestic distribution rentals (U. S. and Canada). Estimates are used, based on actual billings and playdates to date. Only pix excluded are those which went into distribution too late in the year or have played too few dates to make any reasonable determination of final gross business. Among these are Allied Artists' "Battle Zone," Columbia's "The Happy Time," United Artists' "Moulin Rouge" and "Limelight," Paramount's "Come Back, Little Sheba," 20th-Fox's "My Cousin Rachel," RKO's "Hans Christian Andersen," Universal's "Against All Flags" and Metro's "Prisoner of Zenda."

| | | | | |
|---|---|---|---|---|
| 1. | Greatest Show on Earth | Technicolor | Par | $12,800,000 |
| 2. | Quo Vadis | Technicolor | M-G | 10,500,000 |
| 3. | Ivanhoe | Technicolor | M-G | 7,000,000 |
| 4. | Snows of Kilimanjaro | Technicolor | M-G | 6,500,000 |
| 5. | Sailor Beware | Technicolor | 20th | 4,300,000 |
| 6. | African Queen | Technicolor | Par | 4,000,000 |
| 7. | Jumping Jacks | | UA | 4,000,000 |
| 8. | High Noon | | Par | 3,400,000 |
| 9. | Son of Paleface | Technicolor | UA | 3,400,000 |
| 10. | Singin' in the Rain | Technicolor | Par | 3,300,000 |
| 11. | With a Song in My Heart | Technicolor | M-G | 3,250,000 |
| 12. | Quiet Man | Technicolor | 20th | 3,200,000 |
| 13. | Bend of the River | Technicolor | Rep | 3,000,000 |
| 14. | Plymouth Adventure | Technicolor | U | 3,000,000 |
| 15. | Stars & Stripes Forever | Technicolor | M-G | 3,000,000 |
| 16. | World in His Arms | Technicolor | 20th | 3,000,000 |
| 17. | I'll See You in My Dreams | Technicolor | U | 2,900,000 |
| 18. | Iron Mistress | Technicolor | WB | 2,900,000 |
| 19. | Just for You | Technicolor | WB | 2,900,000 |
| 20. | Distant Drums | Technicolor | Par | 2,850,000 |
| 21. | Million Dollar Mermaid | Technicolor | WB | 2,750,000 |
| 22. | Room for One More | Technicolor | M-G | 2,750,000 |
| 23. | Scaramouche | Technicolor | WB | 2,750,000 |
| | | Technicolor | M-G | |

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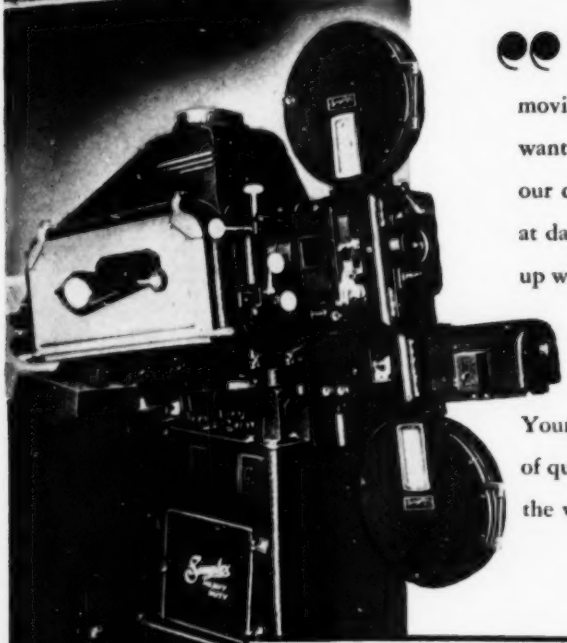

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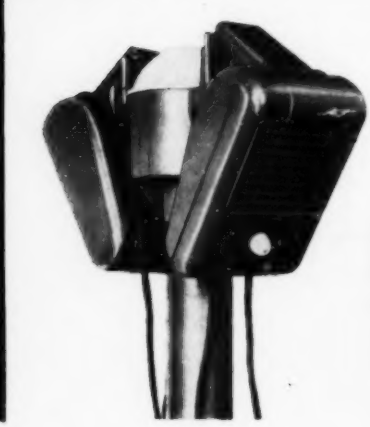
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